Public Utilities

SALUTING THE 24TH ANNUAL E. E. I. CONVENTION • JUNE 4-6, ATLANTIC CITY, N. J.

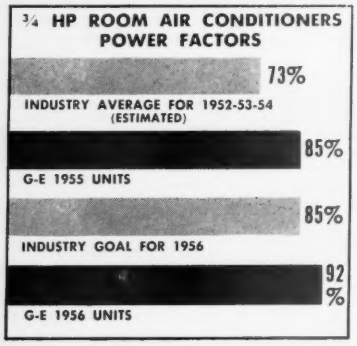
The Electric Power Industry—
Opening Horizons for Future Service

JUNE 7, 1956

HIGHER POWER FACTORS on all 1956 G-E room air conditioners will more than meet industry goals, according to P. M. Augenstein (right), General Manager—Room Air Conditioner Department. Above, he reviews with G. T. Bogard, Manager—Utility Relations, Appliance and Television Receiver Division, the progress made towards helping utilities solve critical summer peak load conditions.

Hiking of room air conditioner PF standards touches off

New savings for distribution systems



90% OR BETTER PF of all 1956 G-E room air conditioners exceeds industry power factor goals. New recommendations are 75% for ⅓ HP, 80% for ½ HP, and 85% for ¾ HP and above.

Adoption of new power factor recommendations by room air conditioner manufacturers holds the promise of new system economies for many utilities. Effective January 1, 1956, the new standard accepted by EEI industries calls for a minimum power factor of 85% for 3/4 HP and 80% for 1/2 HP room air conditioners.

With two million room air conditioners forecast as industry's annual sales volume by '58, increased pf's can relieve many utilities of much unnecessary expense on their distribution systems. Low power factors, as a rule, leave utilities the unenviable choice between excessive capacitance expenditures and the even more costly process of raising system voltage levels. From a revenue standpoint, low power factors force utilities to provide more current without being paid for it.

Utilities are to be congratulated for their efforts towards stimulating interest in higher pf's which benefit both the utilities and the domestic users. Higher pf's mean fewer overloaded house circuits, less fuse failures, and greater unit efficiency because of the improved electrical designs.

At General Electric, work to help utilities realize appreciable distribution system economies has resulted in the fact that G-E room air conditioners during 1955 and again in 1956 met and exceeded the industry goals—goals which were not to be effective until this year. And such work will continue in order to help utilities meet their growing loads at the lowest possible cost. General Electric Company, Schenectady 5, N. Y. 301-309

MORE POWER TO AMERICA

GENERAL ELECTRIC

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Public Utilities
FORTNIGHTLY

VOLUME 57 JUNE 7, 1956 NUMBER 12

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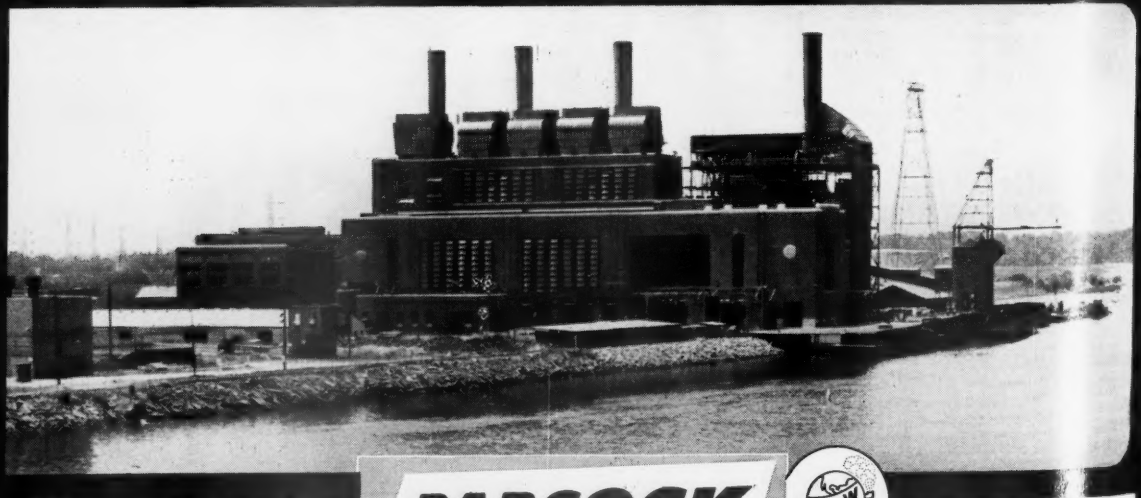

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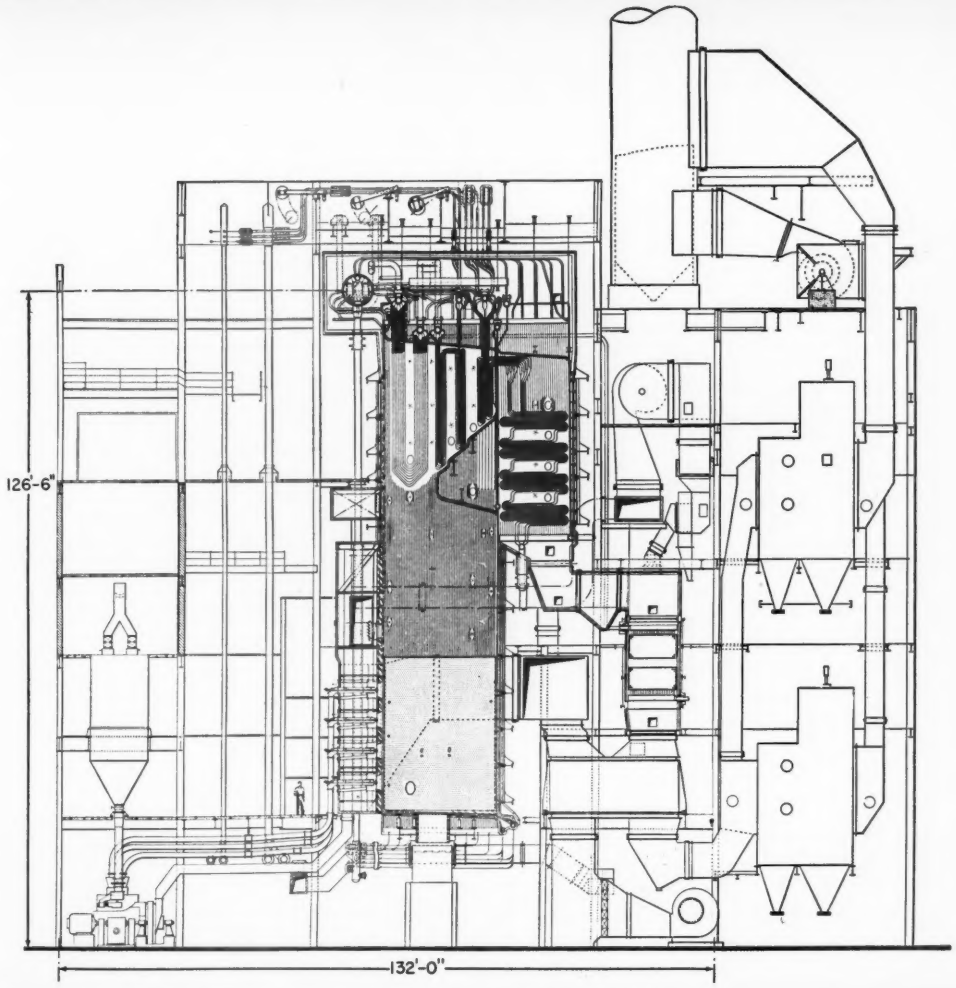

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As part of this far-sighted program, Public Service Electric and Gas Company has installed a new, highly efficient 185,000 KW unit at its Burlington Generating Station. A B&W Radiant Boiler, generating over 1,225,000 pounds of steam per hour, contributes to the high level of performance of this new installation. The boiler is pulverized-coal-fired with provision for oil-firing, and is served by five B&W pulverizers. It is designed with divided furnace construction, gas recirculation, pressure firing and natural circulation. Unit design pressure is high—2700 psi, and the temperature is 1100 F at the superheater outlet with reheat to 1050 F.

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G-753

Pages with the Editors

THE twenty-fourth annual convention of the Edison Electric Institute is being held in Atlantic City, New Jersey, from June 4th to 6th. Following our annual custom, this issue, which will be distributed contemporaneously with this convocation, is devoted to feature articles and other materials of special interest to the electric utilities. We note with interest the key idea selected for this annual meeting of 1956 by the EEI: "Tell Our Story—*Go Forward*. Clearing and Widening the Expressways of Electric Power. For America."

COMMENTING on this theme, HARLLEE BRANCH, JR., president of the EEI and president of the Georgia Power Company, said in his annual message to the membership and friends of that organization:

> As I have traveled around the country this year, I have observed a great quickening of interest in the national problems of the electric utilities. Whereas in the past many companies have felt only a local or sectional interest in the affairs of the industry, today there is a growing realization that what affects any part of the industry affects the whole.

CERTAINLY it is in this spirit that MR.

Fabian Bachrach

HARLLEE BRANCH, JR.

E. SMYTHE GAMBRELL

BRANCH has given us a most thoughtful opening article for this issue. He points to the way in which the electric utilities have met their responsibilities to the public by fulfilling demands for service at constantly lowering costs during periods when prices of other materials and services have steadily advanced. Yet, paradoxically, it is an industry singled out for discrimination and criticism by those who would destroy this enterprise and substitute socialized services. MR. BRANCH's article is a forthright plea for fair treatment of the electric utility industry.

NOTED in the electric utility industry for his qualities of dynamic leadership, MR. BRANCH is one of the youngest presidents the institute has had. Born in Atlanta on June 21, 1906, he will shortly celebrate his fiftieth birthday. After completing his early education in the Atlanta schools, MR. BRANCH went on to Davidson College in North Carolina, receiving his BA degree in 1927. In that year, he entered Emory University as a law student, and was graduated in 1931. He had been a member of the law firm of MacDougald, Troutman, Sams & Branch, of Atlanta, general counsel for Georgia Power for eighteen years, when he was called to the vice presidency and general

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managership of the company in 1949. Early in 1951 he was elected to the presidency.

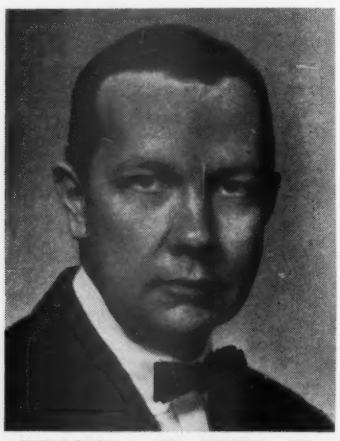
* * * *

We are fortunate in bringing to our readers an inspiring message from another distinguished lawyer who calls Atlanta his home. He is E. Smythe Gambrell, president of the American Bar Association for the current year, who will be equally well remembered by many of our readers as the former chairman of the Section of Public Utility Law of the American Bar Association. He was born in Belton, South Carolina, and educated at the University of South Carolina (AB, '15) and Harvard Law School (LLB, '22). After serving as superintendent of public schools, he entered civil practice in Atlanta.

Mr. Gambrell's article, entitled "The Challenge of the Legal Profession" (beginning on page 800), is the reproduction in full text of his distinguished address, given upon the occasion of the University of Tennessee Law Day banquet, Knoxville, Tennessee, May 4, 1956. As explained in the footnote accompanying his article, some prefatory comment dealing with legal education has been omitted.

* * * *

William A. W. Krebs, Jr., whose article, entitled "The States Discover the Atom: A New Frontier," begins on page 814, is associate professor of law in the School of Industrial Management,



WILLIAM A. W. KREBS, JR.

ORRIN S. VOGEL

Massachusetts Institute of Technology. He is also vice president, Arthur D. Little, Inc., of Cambridge, Massachusetts, and executive secretary of the New England Committee on Atomic Energy. Mr. Krebs was educated at Yale (AB, '38; LLB, '41) and is a member of the bar of Massachusetts and New York.

* * * *

Orrin S. Vogel, whose article on off-peak power begins on page 824, is a graduate of Rensselaer Polytechnic Institute (EE) who also took postgraduate work at Georgia Tech in accounting, business administration, economics, and banking. His first professional employment was as a valuation engineer for the city of New York, after which he was employed as a consultant by the Georgia Power Company, and in 1937 by the Georgia Public Service Commission. Since 1947 he has been in charge of the rate department of the Florida Power Corporation, of which he is now director of economic research. Mr. Vogel has had broad experience both as former chief engineer of the Georgia commission and during his service with the Florida Power Corporation in the preparation and presentation of rate cases before state, federal, and local regulatory agencies.

The next number of this magazine will be out June 21st.

The Editors

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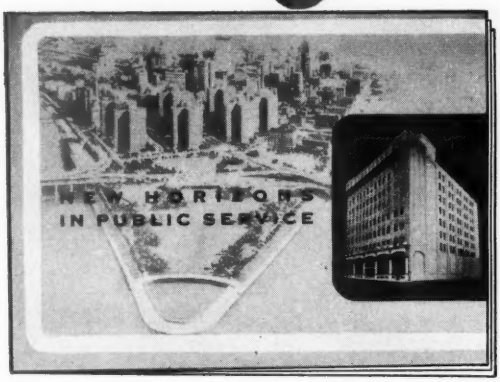

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(June 21, 1956, issue)

★

ATOMIC POWER AND THE COAL INDUSTRY

Various views have been expressed on the future of the coal industry in its relation to atomic power development and other advances. Such articles have often suggested serious dislocation, if not total displacement, of the coal industry over the long run because of the use of atomic fuels. This article by the Honorable James E. Van Zandt, Representative from Pennsylvania, places the question in its proper perspective. Actually, experience so far suggests that atomic power development will increase rather than replace the use of coal as a basic energy source. The Pennsylvania lawmaker gives us reasons for his conclusion that nothing could be farther from the fact than the suggestion that atomic energy eventually might close down our coal mines.

THE FIFTH FREEDOM

Forty-three years ago, there was strike violence in Cincinnati, Ohio, resulting in rioting and disorders. The trouble stemmed from a transit strike which caused widespread public indignation. Today, thanks to a unique bargaining agreement reached between management and employees, there could not be a repetition of such difficulties. John Paul Jones, president of the Cincinnati Transit Company, in an interview with the veteran writer of business articles, George W. Keith, tells us how this came about and why Cincinnati Transit today has attained a "fifth freedom"—the freedom from labor strife.

GETTING UTILITIES TOGETHER WITH THE CITY ENGINEERS

One of the most surprising things about city planning and operation in past years was the neglect of public works officials and utility engineers to get together. It is hardly believable that each group would so long go its own way digging up city streets without consultation and co-ordinated planning. More recently, however, the American Public Works Association has taken a constructive part in bringing utility engineers and city engineers together on co-ordinating their programs. Of course, in the larger cities municipal and utility engineers have long-standing procedures going back many years on this subject. But with expanding utility systems exploding into dozens of municipalities at the same time, centralized co-ordination is needed in many areas. This article, by Milton Offner, secretary of the Los Angeles Board of Public Works and past president of the American Public Works Association, is an interview with James H. Collins, Hollywood writer of business articles.

★

Also . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***

Cranky in more ways than one

It took plenty of "elbow grease" to operate this oldtimer. Like many other old-fashioned hand operations it has been supplanted by a machine which can turn out the product faster and more economically.

WHEN IT comes to the compilation of figures, it's just plain good sense to abandon hand operations in favor of machine tabulation. Take the important project of rate analyses for example—there's no need to compile these figures in your office, tying up personnel and office machines, when you can farm out the job to us and get it much faster and cheaper. Our "Bill Frequency Analyzer" can analyze between 200,000 and 300,000 bills a day and do the work in "One Step".

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Remarkable Remarks

"There never was in the world two opinions alike."
—MONTAIGNE

A. J. WAGNER
General manager, Tennessee Valley Authority.

". . . the framers of the TVA Act had no idea that its power rates would come to be regarded as rate yardsticks elsewhere."

FELIX EDGAR WORMSER
Assistant Secretary of the Interior.

"One of the greatest apprehensions the businessman has is that reasonable government regulation, which we have come to accept, will deteriorate into arbitrary and punitive bureaucratic controls."

JAMES B. BLACK
Chairman of the board, Pacific Gas and Electric Company.

"Two contributions to our national life from the state of Tennessee hold considerable current public attention. I submit that for future generations of Americans, the better yardstick of the two, by far, is Davy Crockett."

WALKER L. CISLER
President, Detroit Edison Company.

"It is not unreasonable to think that atomic fuel can be converted into liquid for cars. . . . We must work and spend. We now are in the first generation of atomic development. Liquid atomic power will come in the second or third generation."

WILLIAM S. RICHARDSON
President, B. F. Goodrich Company.

"It behooves all of us stockholders in America to take inventory of ourselves as to the extent of our own investment in time and money, or both, in the system that has made us great. We must make sure that complacency with or neglect of our investment will not result in a deterioration of it."

GORDON DEAN
Former chairman, Atomic Energy Commission.

"The atomic revolution poses for the public relations man his greatest challenge and his greatest opportunity. With the exception of the spiritual stories of Christ, Buddha, and the like, the material story of nuclear energy is one of the biggest which has burst upon the world since the beginning of recorded history."

EDMUND G. BROWN
Attorney general, state of California.

"Public power plants produce 35 per cent of California's present power requirements. However, they must continue to grow and expand with the communities which they serve. This means that they must participate equally with privately owned utilities in any federal subsidies which are granted for the development of nuclear power plants."

ROB ROY MACLEOD
Commercial vice president, Niagara Mohawk Power Corporation.

"Taxes are a broad avenue to Socialism. The higher taxes go, the more difficult thrift becomes, and eventually capital formation on the part of individuals is impossible. Then the government becomes the capitalist and furnishes the money to operate enterprises of all sorts. When economic power and political power are both in the hands of the state, freedom is gone; Soviet Russia is living testimony to this historical fact."

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"... this program will do a tremendous job"

"I personally believe that the Live Bett Elecrically program is going to increase t over-all interest of the public in the benef our industry has to offer. This unquestionab will stimulate the sale of appliances and lo growth."

Walter McK
General Sales Manage
Rochester Gas and Electric Corporati

How Rochester Gas and Electric is buildinge with LIVE BETTER...E

Today over 200 electric utility companies throughout the country are actively participating in the LIVE BETTER . . . *Electrically* program. Here's how one combination utility – Rochester Gas and Electric – is using this long-range, industry-wide promotion to get maximum results for its own residential load-building efforts.

Every electrical promotional activity at RG&E is being launched under the banner of "LIVE BETTER . . . *Electrically*." This theme dominates and unifies RG&E's dealer program, adequate-wiring program, home-appliance program, farm program, architects and builders promotion, home-economics program, model-home promotion, advertising, and Electrical Association activity.

Important to the success of this far-flung activity is the liberal use made of promotional materials available from LIVE BETTER . . . *Electrically*. RG&E is distributing copies of the 72-page consumer idea book, sending copies of "How to Help Home Owners LIVE BETTER . . . *Electrically*" to its trade allies, using banners, streamers, counter cards, mats with the slogan and emblem.

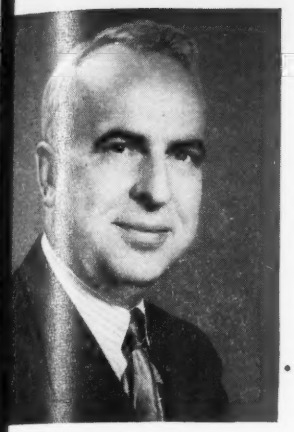
These materials are available to every utility company in America. The impact of national LIVE BETTER . . . *Electrically* consumer advertising in magazines and network television shows, plus industry-wide trade advertising, helps insure the success of this cooperative effort. Those utilities—like Rochester Gas and Electric—which are working for and getting the cooperation of trade allies in their area will reap the greatest rewards.

Consumer idea book, "New Step-by-Step Ideas to help you LIVE BETTER . . . *Electrically*," will be offered in RG&E's editorial-style advertisements to run in local newspapers.

These are signs of LOW HOUSEPOWER
HOW TO FREEZE FRESH FRUITS AND VEGETABLES
Why "Sweat Out" another summer ... AIR CONDITION now!

Running headline, "LIVE BETTER...*Electrically*," provides an "umbrella" theme for pending newspaper advertisements of The Electrical Association of Rochester, Inc. These advertisements will appear every week for 50 weeks.

Home economists in the Ho Economics & Lighting Dept. – Miss Marcia Dowd – tell wome groups of the many ways they c LIVE BETTER . . . *Electrically*.



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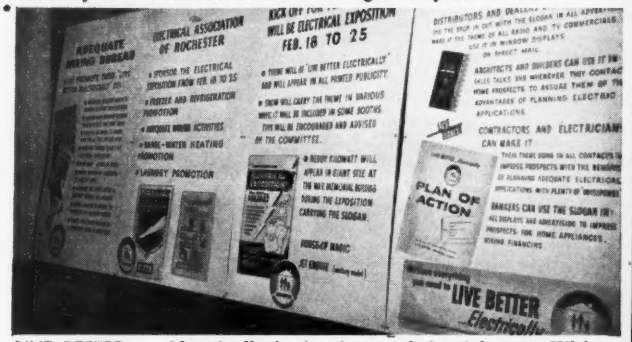
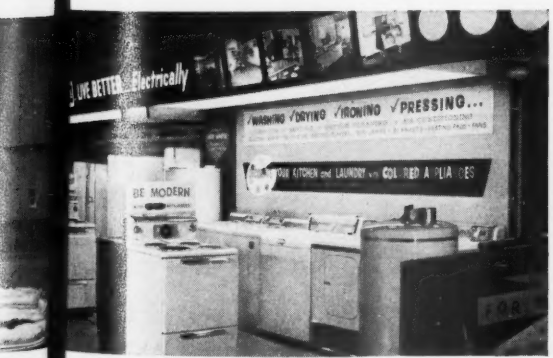
R...Electrically

Broad scope of RG&E's load-building program and its liberal use of the LIVE BETTER . . . *Electrically* theme and materials are indicated by Assistant General Sales Manager Graydon Curtis.



LIVE BETTER . . . *Electrically* is the theme of the Adequate Wiring Bureau's promotion and appears as the theme of Electrical Exposition. Poster shows how RG&E works with dealers and distributors.

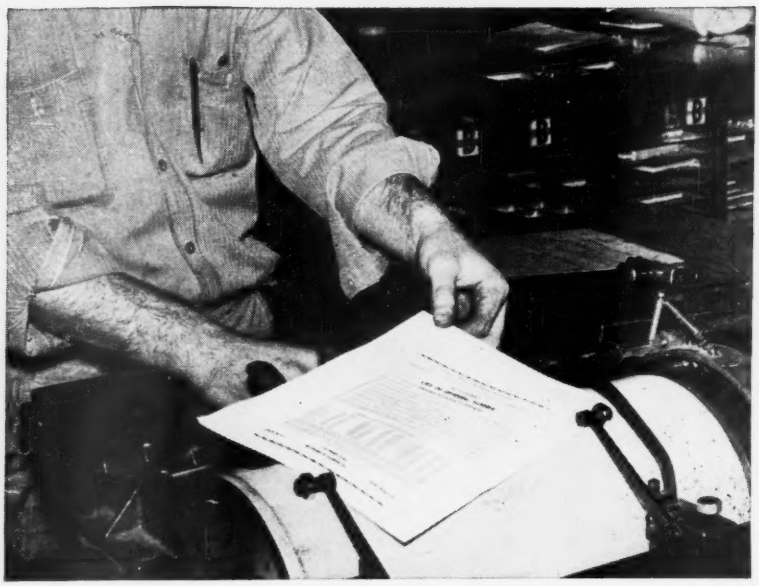
Home-modernizing promotion, of particular interest to architects and builders. This activity, as well as the RG&E Farm Department program, will tie in with the LIVE BETTER . . . *Electrically* campaign.



...pliance exhibits, featuring high-wattage appliances like ...ashers, dryers, automatic water heaters use the LIVE ...ETTER . . . *Electrically* theme as a prominent identifying ...d unifying device. This is another example of how RG&E ...ets maximum mileage out of the program.

At Electrical Exposition, Rochester Gas and Electric exhibit dramatizes the decorative effects homemakers can achieve with lighting – and an illuminated valance-type display spells out the exhibit slogan: "LIVE BETTER . . . *Electrically.*"

HERE'S THE PROOF . . .



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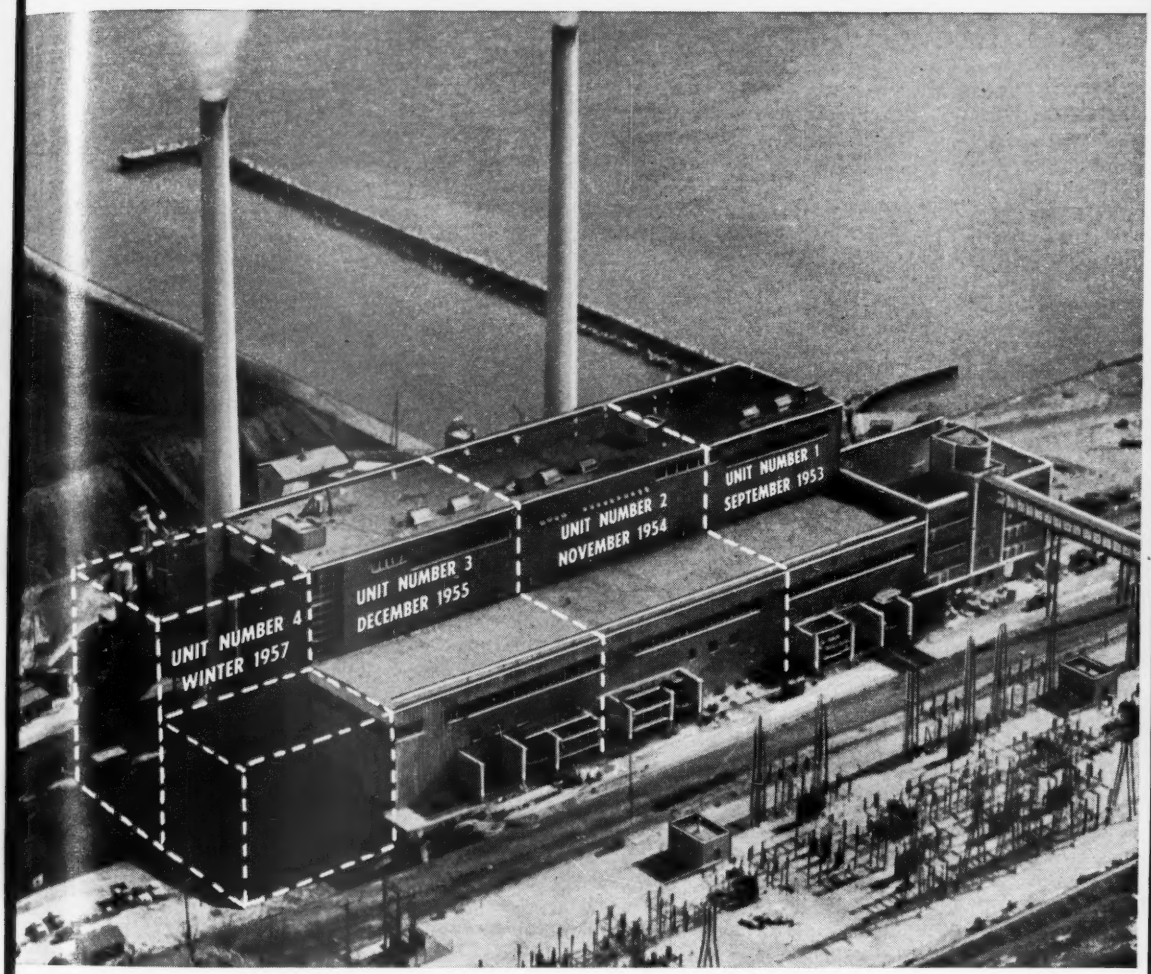


Unit No. 3 is on the job ...No. 4 is on the way!

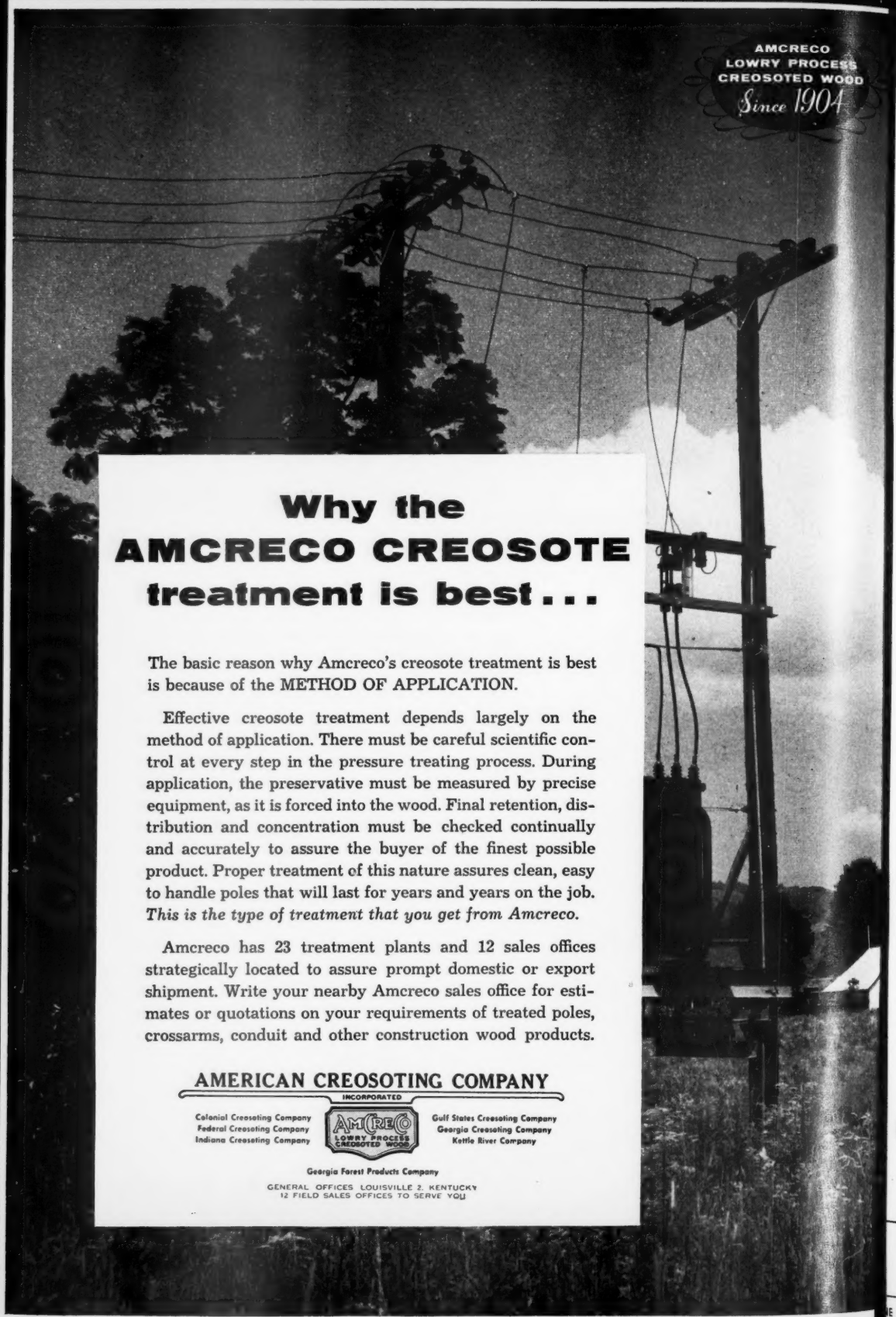
Power resources of the Wisconsin Electric Power Company system were increased in 1955 when a third 120,000 kilowatt generating unit was placed in service at Oak Creek. Work is now in progress on a fourth unit which is scheduled for completion during the winter of 1957. When completed, the Oak Creek plant will be capable of generating in excess of 500,000 kilowatts and will be the largest in Wisconsin, exceeding the capacity of our 400,000 kilowatt Port Washington plant, presently the largest.

Expansion at Oak Creek is part of a long-range program to improve the generating, transmission and distribution facilities needed to meet continually increasing demands for power in this area of diversified activity and stable growth.

Completion of the third unit at Oak Creek increases the dependable generating capacity of our system's seven steam plants and 18 hydro-electric plants to a total of 1,252,610 kilowatts.

WISCONSIN ELECTRIC POWER COMPANY SYSTEM

MILWAUKEE 1, WISCONSIN



Why the AMCRECO CREOSOTE treatment is best . . .

The basic reason why Amcreco's creosote treatment is best is because of the METHOD OF APPLICATION.

Effective creosote treatment depends largely on the method of application. There must be careful scientific control at every step in the pressure treating process. During application, the preservative must be measured by precise equipment, as it is forced into the wood. Final retention, distribution and concentration must be checked continually and accurately to assure the buyer of the finest possible product. Proper treatment of this nature assures clean, easy to handle poles that will last for years and years on the job. *This is the type of treatment that you get from Amcreco.*

Amcreco has 23 treatment plants and 12 sales offices strategically located to assure prompt domestic or export shipment. Write your nearby Amcreco sales office for estimates or quotations on your requirements of treated poles, crossarms, conduit and other construction wood products.

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Colonial Creosoting Company
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AMCREC
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12 FIELD SALES OFFICES TO SERVE YOU

FOR EXECUTIVE DECISIONS . . . .

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ENGINEERING—CONSULTING AND DESIGN

Whether in general operations, financing, engineering or other matters of business, the consulting and advisory services of Commonwealth can be of material assistance.

Informed executives and boards of directors rely on competent investigation and analysis as the basis of reports and studies leading to decision. In a day of involved regulatory rules and requirements, coupled with rapid changes in business conditions, the services of experienced consultants in special fields can be of great value.

Commonwealth's organization is prepared to assist you in such matters.

Send for our booklet . . .

It may point out sources of help for you

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The Commonwealth Professional Engineering Organization

For emergencies and

the Wisconsin Power and Light Company brings a new power source right to the point of need.

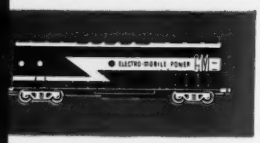
This 500-kw. Electro-Mobile highway unit helps provide uninterrupted service to its customers while line and substation work is being performed. Outages are thus minimized and work can be done more safely in less time.

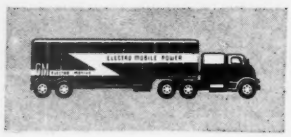
The unit also is available to handle major emergency situations which might arise—with all the speed and mobility of highway transportation.

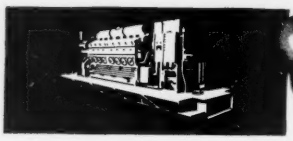
ELECTRO-MOTIVE DIVISION

GENERAL MOTORS • La Grange, Illinois

Rail car, truck trailer and portable units—350 to 1,000 kw.

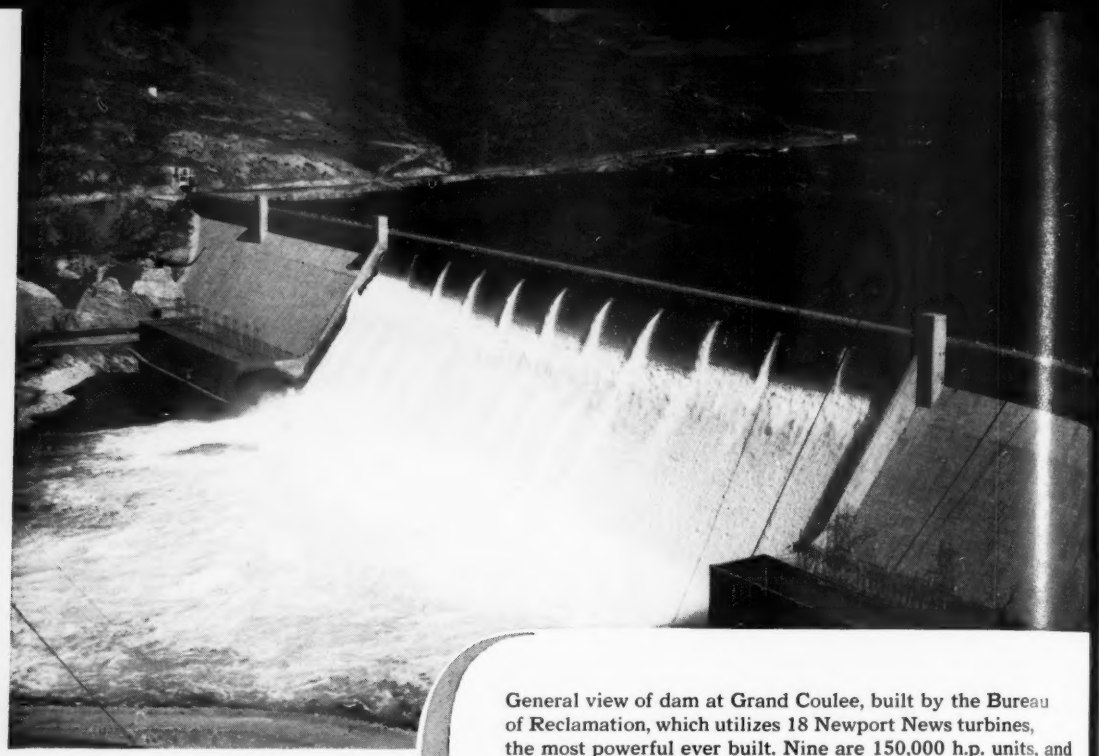






Sold and serviced directly through a manufacturer's organization. Electro-Motive Division offices located in: New York City, Chicago, Jacksonville, St. Louis and San Francisco. In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

planned outages
500 KW MOBILE ELECTRIC GENERATING STATION
Ready Kilowatt



General view of dam at Grand Coulee, built by the Bureau of Reclamation, which utilizes 18 Newport News turbines, the most powerful ever built. Nine are 150,000 h.p. units, and the other nine are rated at 165,000 h.p. each.

Specialists ... in building Water Power Equipment

Typical Users of Newport News Equipment

PLANT	LOCATION
Boone	Tennessee
Buchanan	Texas
Caonillas	Puerto Rico
Chief Joseph	Washington
Clark Hill	South Carolina
Deer Lake	Newfoundland
Folsom	California
Fort Patrick Henry	Tennessee
Hiwassee	Tennessee
Hoover	Nevada
J. H. Kerr	Virginia
Jim Woodruff	Florida
Lower Salmon	Idaho
Norris	Tennessee
Rock Creek	California
Santee-Cooper	South Carolina
C. J. Strike	Idaho
Whitney	Texas
Wilson	Alabama

Turbines designed and built for the world's largest development at Grand Coulee... and for other hydroelectric installations in America and various parts of the world... bespeak the skill and facilities offered by Newport News.

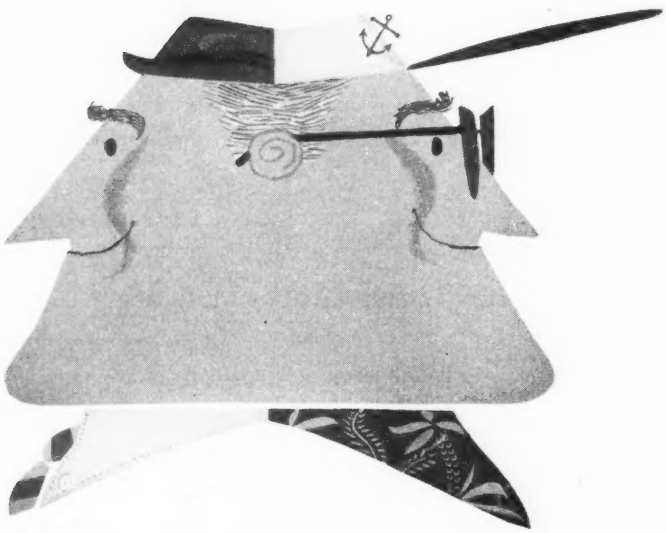
This trained organization has filled hydroelectric turbine contracts with an aggregate rated output of 7,000,000 horsepower.

Other equipment designed and built by Newport News includes penstocks, pressure regulators, valves, pumps, gates and rack rakes. Upon request, a copy of our illustrated booklet entitled "WATER POWER EQUIPMENT" will be sent to you.

Newport News
SHIPBUILDING AND DRY DOCK COMPANY
Newport News, Virginia

WHEN IN FLORIDA...

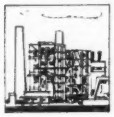
LOOK BOTH WAYS!



Florida's business climate is warm and inviting, too!

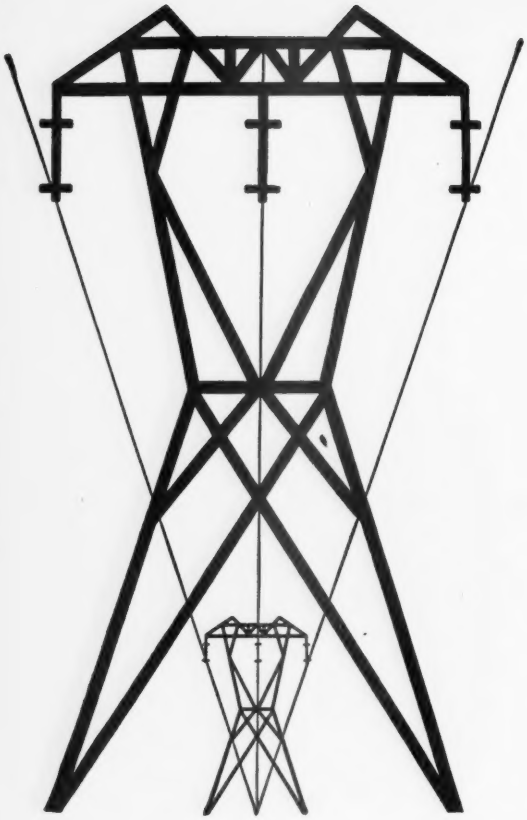
There's more to Florida than playtime fun. *Tremendous population growth* means hungry markets...at home and in next door Latin America. *Friendly government* welcomes investment capital... no state income, ad valorem or punitive taxes. *Ideal living conditions*, healthful outdoor recreation...assure high worker morale, boost production.

Florida Power & Light Company is providing vital power for Florida's forward surge. In 1955 the generating capability increased 22% to 902,000 kilowatts — up 329% since VJ-Day as against an increase of only 128% for the nation.



FLORIDA POWER & LIGHT COMPANY

P. O. Box 3100 • Miami 30, Florida



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- **144 Years Experience**

THE FIRST NATIONAL CITY BANK OF NEW YORK, since 1812 has helped finance every important source of energy America has known—from the water wheel to great electric and gas systems and interstate pipelines.

To make this background of experience quickly available, The Bank has established a special Public Utility Department. This Department is staffed by officers who are thoroughly familiar with all phases of utility financing. It is their job to focus the Bank's full resources through one channel to provide effective assistance to the industry in financing its tremendous construction program.

For all types of commercial banking service, please call on us.

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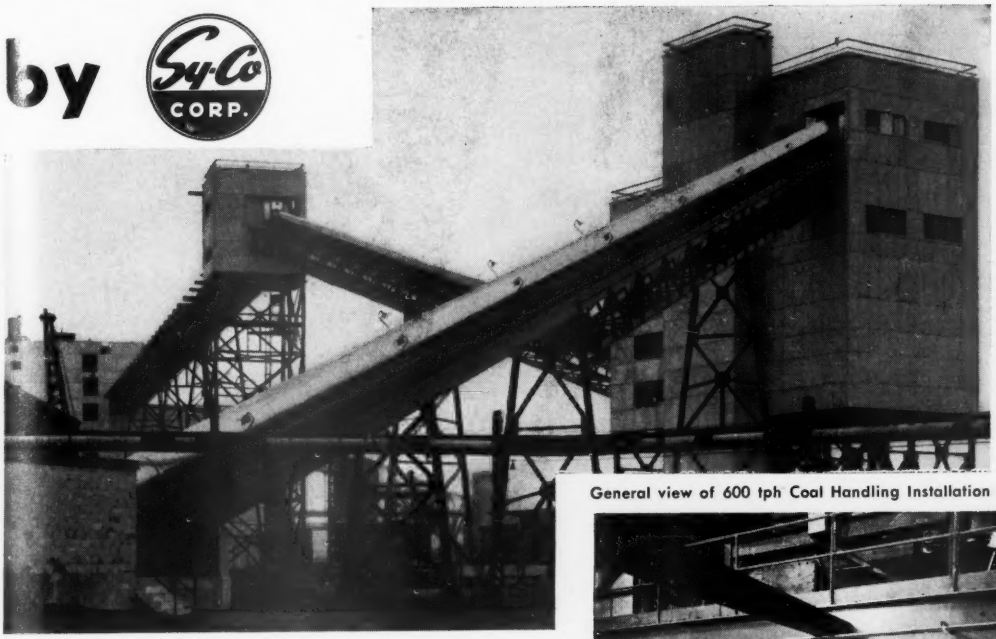
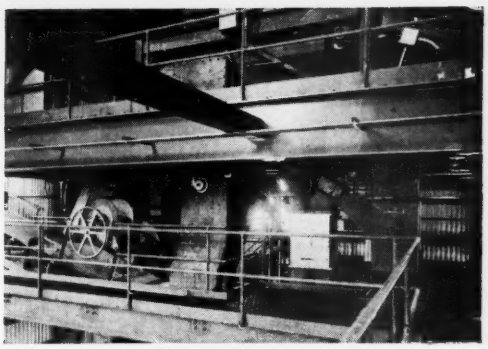
COAL HANDLING CONVEYORS...

by Sy-Co CORP.



General view of 600 tph Coal Handling Installation



Motorized tripper with bunker seal.

At the new Astoria Plant,

Consolidated Edison Company of New York, Inc.

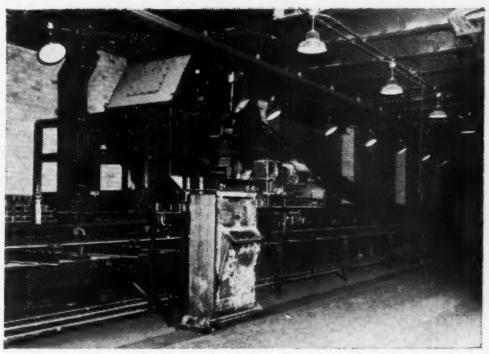
LOW COST COAL HANDLING IS PLANNED

with three factors in mind:

- Efficiency
- Economy of installation and operation
- Low maintenance costs

SY-CO Corporation treats these factors in all bulk handling problems with the skill and knowledge that comes only with experience.

WRITE FOR DESCRIPTIVE LITERATURE



Chute arrangement at sampler and automatic weighing station, also showing tramp iron chutes at the megnetic pulley.

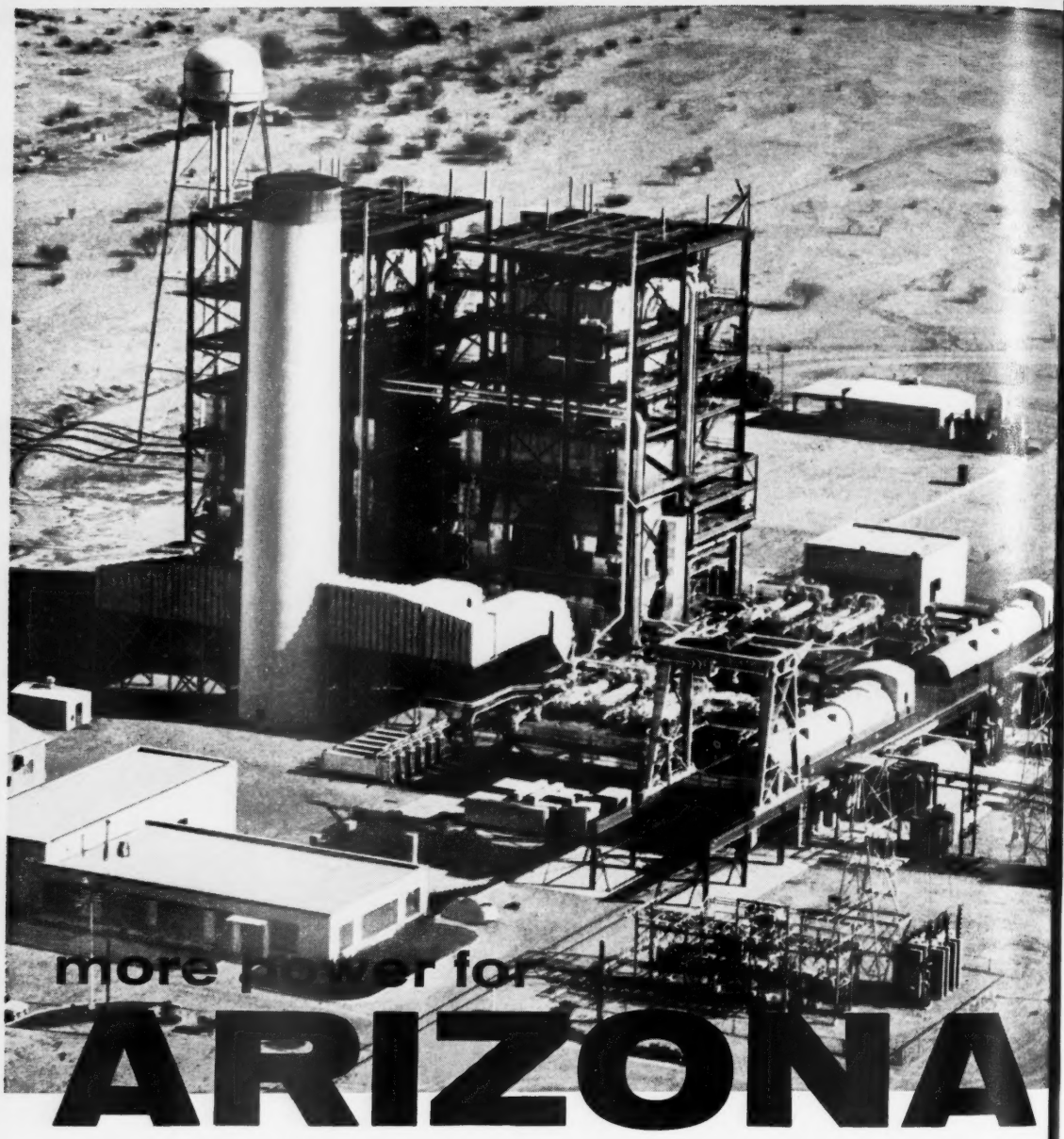
SY-CO CORPORATION

P. O. Box 388 Lyndhurst, N. J.

GEneva 8-2737

A reputation for Dependability is our most valued possession

CONVEYING SYSTEMS FOR EVERY PURPOSE



With the completion and placing in operation of the Saguaro Steam Electric Station, the Arizona Public Service Company makes available an additional 200,000 kw of electric power for Arizona's industrial and domestic needs.

Ebasco takes pride in having served Arizona Public Service Company in the design and construction of this modern plant.

For more information about the services Ebasco offers business and industry, send for "The Inside Story of Outside Help." Address Ebasco Services Incorporated, Dept. W, Two Rector Street, New York 6, N. Y.

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A TRIBUTE TO

Colonel Howard S. Bennion

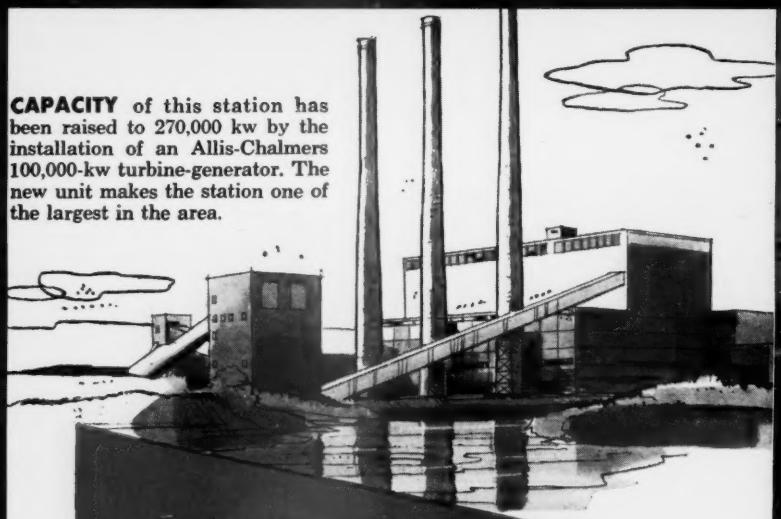
THE EMPLOYEES OF ATLANTIC CITY ELECTRIC COMPANY JOIN THE ELECTRIC LIGHT AND POWER INDUSTRY IN SALUTING COLONEL HOWARD S. BENNION UPON HIS RETIREMENT AS VICE PRESIDENT AND MANAGING DIRECTOR OF EDISON ELECTRIC INSTITUTE.

COLONEL BENNION HAS DEVOTED CONSIDERABLE OF HIS LIFETIME IN THE INTEREST OF SERVICE TO THE PUBLIC AND TO THE ADVANCEMENT OF OUR INDUSTRY.

HIS SOUND LEADERSHIP AND GUIDANCE WILL HAVE A LASTING EFFECT ON CUSTOMERS, INVESTORS AND EMPLOYEES OF PUBLIC UTILITIES EVERYWHERE.

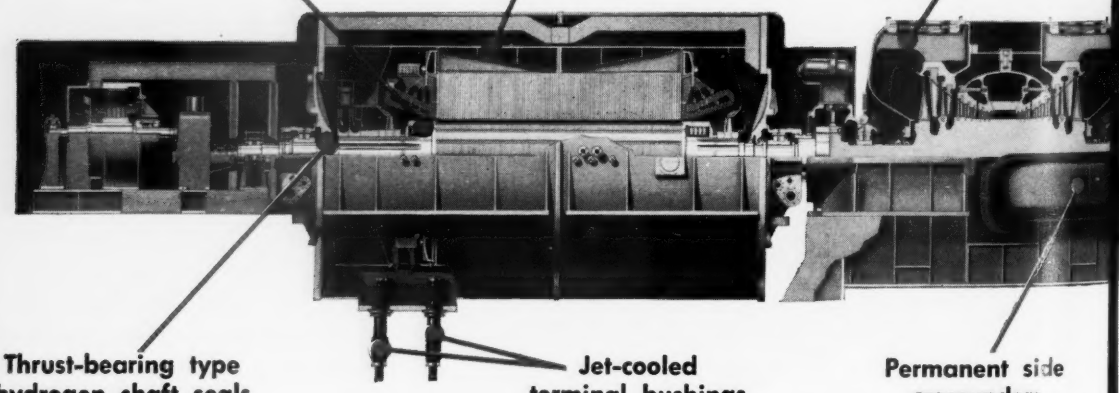
ATLANTIC CITY ELECTRIC COMPANY

ATLANTIC CITY, N. J.



CAPACITY of this station has been raised to 270,000 kw by the installation of an Allis-Chalmers 100,000-kw turbine-generator. The new unit makes the station one of the largest in the area.

Here's MORE Power


Supercharged cooling of rotor
Symmetrical stator with flexible core support
Fabricated steel low pressure casing
Thrust-bearing type hydrogen shaft seals
Jet-cooled terminal bushings
Permanent side crossunders

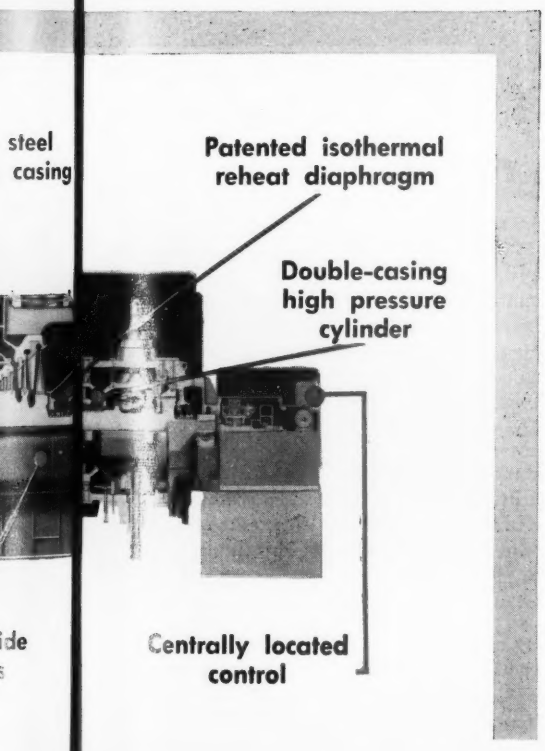
A-C ALLIS-CHALMERS

ALLIS

STEAM CONDITIONS for this 100,000-kw turbine are 1450 psig, 1000 F inlet, 1000 F reheat, 1.5 inch mercury absolute exhaust. Generator rating is 133,689 kva, 0.85 pf, 13,800 volts, 0.64 short-circuit ratio, at 30 psig hydrogen pressure.

Pioneer Service & Engineering Co., consulting engineers

erPioneering



New 100,000-kw reheat unit in midwestern utility combines side-crossunder, tandem-compound steam turbine with supercharged hydrogen-cooled, 3600-rpm generator.

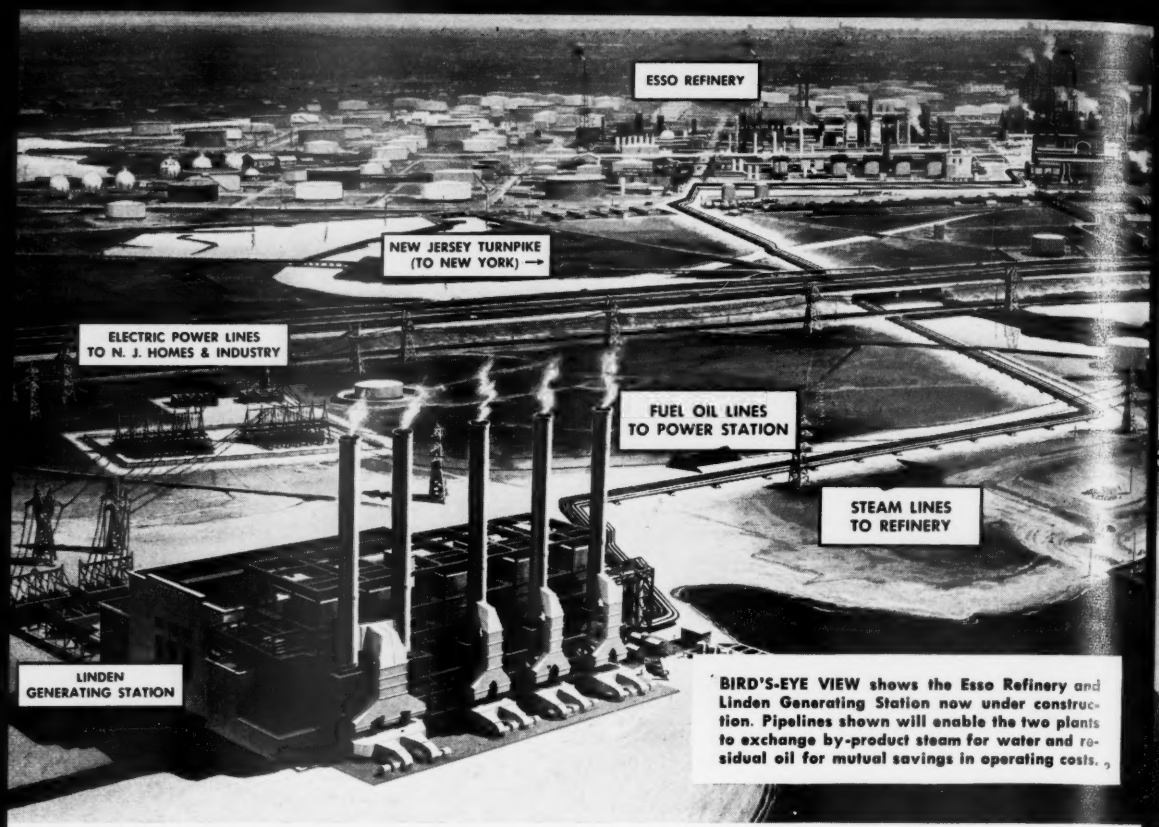
To meet present and future requirements, this modern Allis-Chalmers turbine-generator combination went into operation recently in a large midwestern utility power plant.

Typical of Allis-Chalmers tandem 3600-rpm reheat turbines for ratings of 75,000 to 250,000 kw, this 100,000-kw unit joins others already proved in operation.

You can continue to look to Allis-Chalmers for MORE pioneering of turbine-generator units engineered to your requirements — up to 500,000 kw. For more information, contact your nearby A-C representative, or write Allis-Chalmers, Power Equipment Division, Milwaukee 1, Wisconsin.

A-4985

SCHALMERS


ESSO REFINERY
NEW JERSEY TURNPIKE (TO NEW YORK) →
ELECTRIC POWER LINES TO N. J. HOMES & INDUSTRY
FUEL OIL LINES TO POWER STATION
STEAM LINES TO REFINERY
LINDEN GENERATING STATION

BIRD'S-EYE VIEW shows the Esso Refinery and Linden Generating Station now under construction. Pipelines shown will enable the two plants to exchange by-product steam for water and residual oil for mutual savings in operating costs.

Trading steam for oil saves money for utility and refinery

Public Service Electric and Gas Co., N. J. cooperates with Esso Refinery in giant swap

One of the biggest "swaps" in industry will soon take place at the new $100,000,000 Linden Generating Station now being erected by the Public Service Electric and Gas Company at Linden, New Jersey.

Built to add nearly half a million kilowatts of generating capacity to the growing PSE&G system, this station will also supply all the process steam requirements of the huge nearby Bayway Refinery of the Esso Standard Oil Company. In return for this steam, the refinery will pipe back water and residual oil for the generating station boilers. By trading each other's by-products, both plants will save money.

Steam for the refinery will be extracted from two 225,000-kw General Electric turbine-generators after it has already done efficient work in generating electric power. Much of the energy content of the low-pressure steam would normally be lost in the condensers after passing through the turbine. On account of the refinery's use of this relatively low-pressure steam, the new Linden Generating Station will have a highly economical steam cycle. As a result, it will probably show the most efficient use of steam—in terms of fuel-per-kilowatt-hour—of any large power station yet in operation.

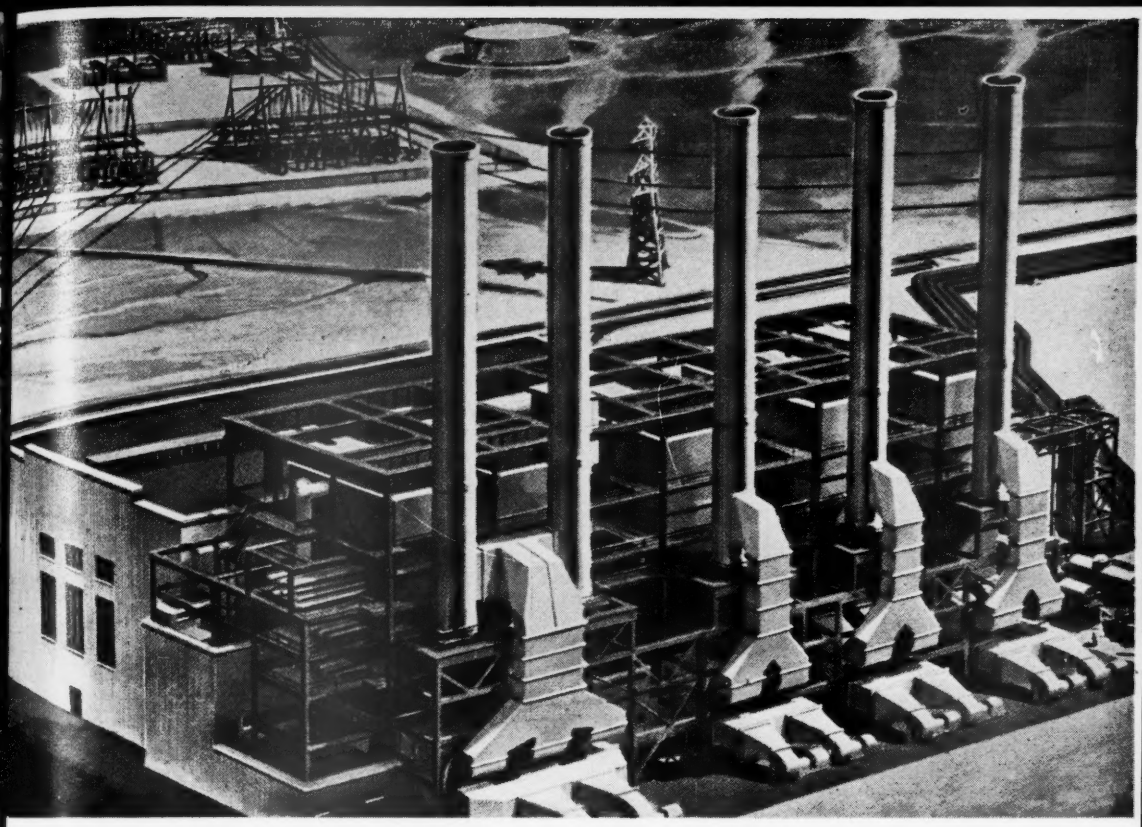
To meet the unusual requirements of this installation, General Electric is building the largest automatic extraction turbines ever made. The first of these units will handle the largest steam flow of any turbine, conventional or extraction, so far designed—2,800,000 pounds per hour.

Supply of process steam like this offers almost unlimited potentialities to electric utilities in many industrial areas. Large Steam Turbine-Generator Department, General Electric Company, Schenectady 5, N. Y.

354-44

Progress Is Our Most Important Product

GENERAL ELECTRIC



MORE POWER FOR NEW JERSEY

Progress in New Jersey is active and continuing. There is no better method of measuring this dynamic growth than the continuing development of the electric system of Public Service Electric and Gas Company in the progressive area which it serves.

The new $100,000,000 Linden Generating Station now being built will add 450,000 kilowatts to the growing Public Service system. Furthermore, the company recently announced plans to construct another plant, the Bergen Generating Station, which will have a capacity of 550,000 kilowatts. Thus, the company will be building two generating stations at the same time, thereby adding one million kilowatts to the electric system.

The industrial and residential growth in New Jersey is equally dynamic. Manufacturers have discovered that business succeeds at the Crossroads of the East, and Public Service continues to expand in advance of their demands for dependable service.

Public Service

AT THE CROSSROADS OF THE EAST

Underwriters of

Public Utility Bonds,
Preferred and Common Stocks

Securities of

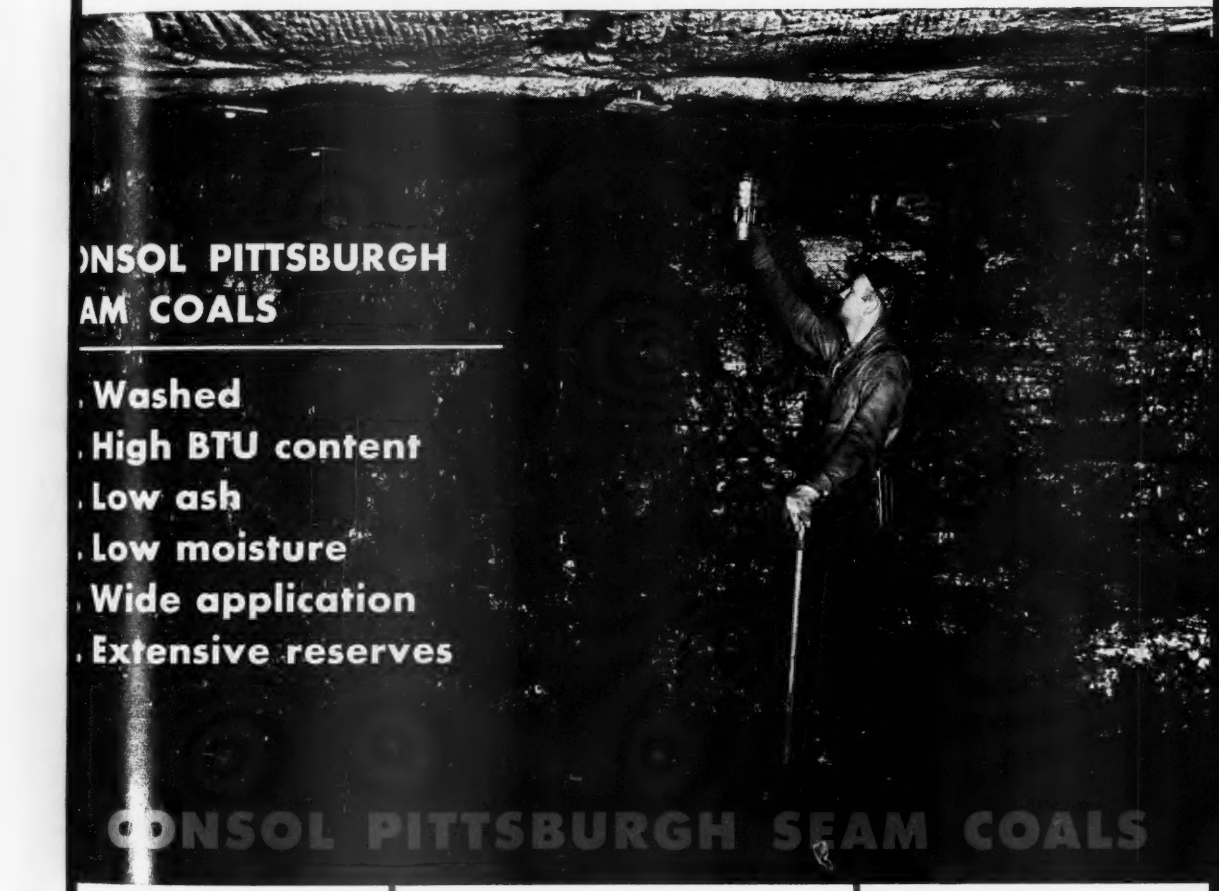
Industrial Corporations

LEHMAN BROTHERS

New York Los Angeles Chicago

Consol PITTSBURGH SEAM COALS

INCREASE PLANT EFFICIENCY — REDUCE COSTS



Mined in the famous Fairmont Field of Northern West Virginia, Consol MOUNTAINEER is idely accepted by the electric ility industry because of its supe- r performance under all load con- tions and for the economy it ovides.

Produced in Eastern Ohio, every pound of Consol HANNA electric utility coal is washed and dried to assure a consistent high quality product and as a guarantee of our pledge—PERFECTION IN PRODUCTION.

Comin from the Weste Pennsylvania coa producing district Consol CHAMPION pulverizer fuel is favorably know for its uniform high BTU conten and efficient performance by th electric utility industry it serve so well.

PITTSBURGH CONSOLIDATION COAL CO.

KOPPERS BUILDING, PITTSBURGH, PA.

Union Securities Corporation (with its predecessor organization) has been continuously engaged in all phases of investment banking for the utility industry since 1870 when it sold an issue of Mutual Gas Company (of New York) Common Stock.

Public utility issues managed or co-managed since January 1, 1955, include:

$15,000,000	Alabama Power Company First Mortgage 3½'s, 1986
93,500 Shares	Arkansas Power & Light Company 4.72% Preferred Stock ($100 Par)
75,000 Shares	Atlantic City Electric Company Common Stock
$10,000,000	Central Power & Light Company First Mortgage 3¼'s, 1986
256,503 Shares	Colorado Interstate Gas Company Common Stock
70,000 Shares	Louisiana Power & Light Company 4.44% Preferred Stock ($100 Par)
40,000 Shares	Mississippi Power Company 4.40% Preferred Stock ($100 Par)
60,000 Shares	New Orleans Public Service Company 4.36% Preferred Stock ($100 Par)
287,000 Units	Pacific Northwest Pipeline Corporation 5½% Interim Notes and Common Stock
776,066 Shares	Pioneer Natural Gas Company Common Stock
60,000 Shares	Southwestern Gas & Electric Company 4.28% Preferred Stock ($100 Par)
$17,000,000	Texas Electric Service Company First Mortgage 3¼'s, 1985

Union Securities Corporation

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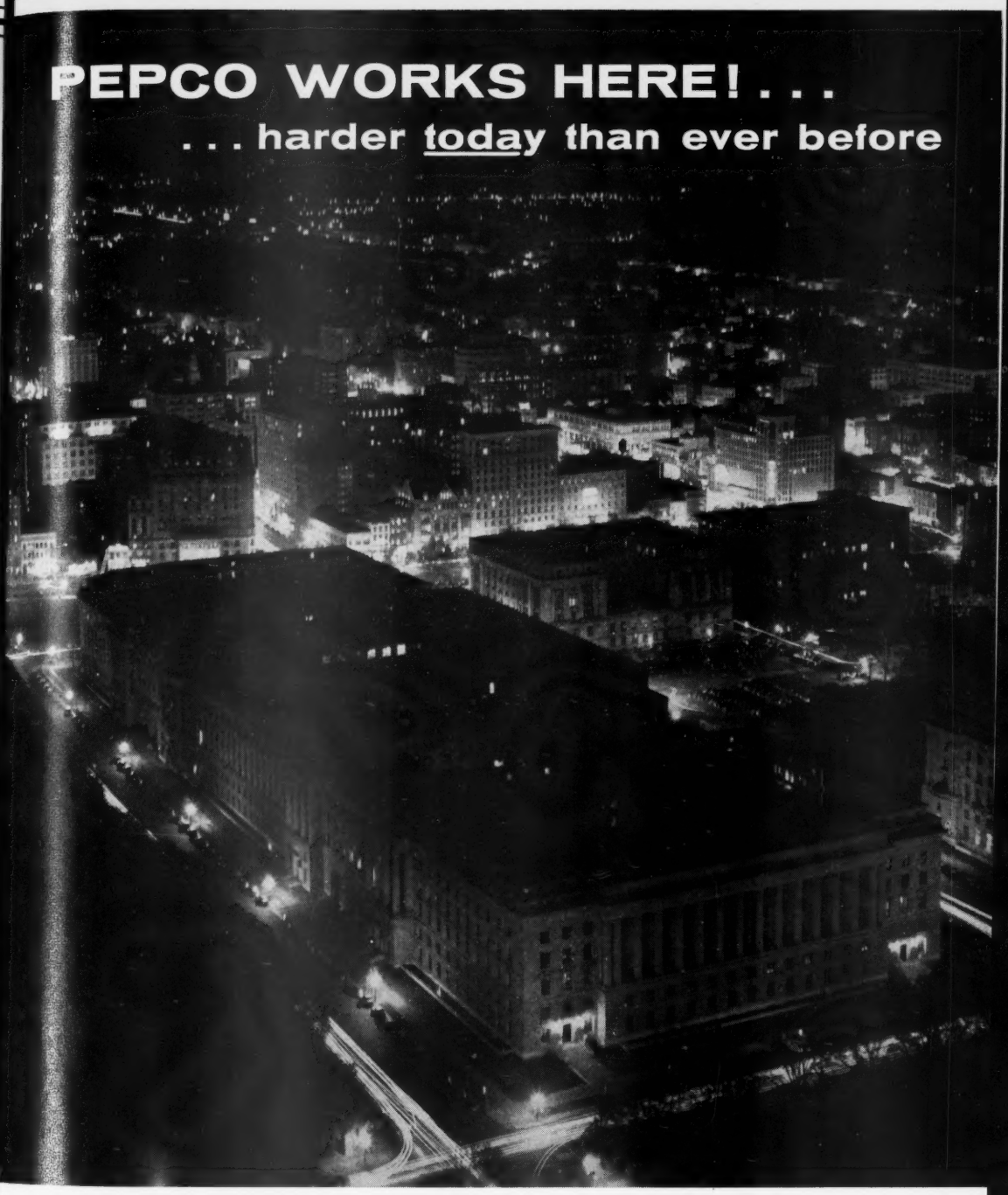
HARTFORD • PHILADELPHIA • SYRACUSE

PEPCO WORKS HERE! . . .

. . . harder today than ever before



In 1955 . . . New Highs:

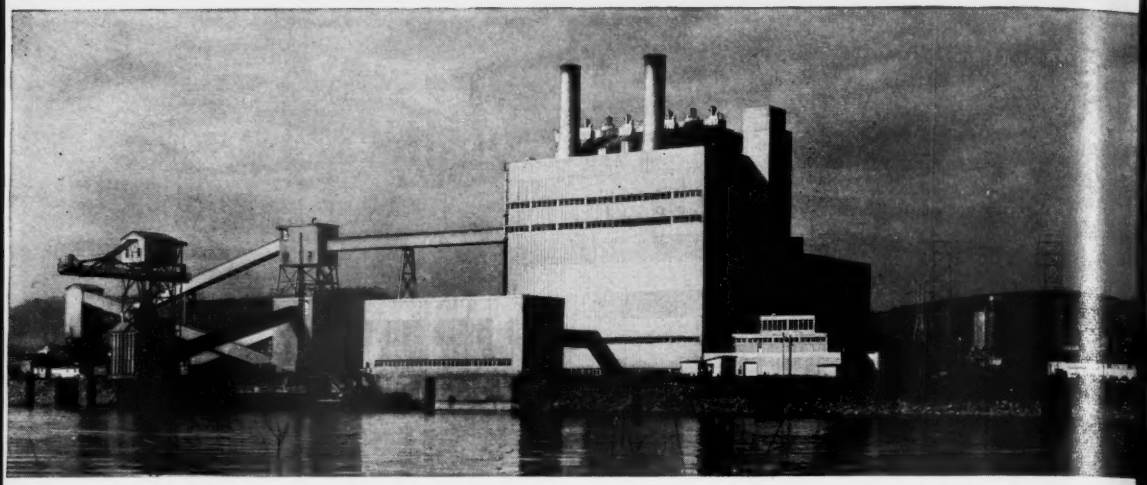
Peak load	810,000 kilowatts
Sales	3,176,580,000 kilowatt hours
Customers	321,775

60th Anniversary Year

Pepco
Matchless Service

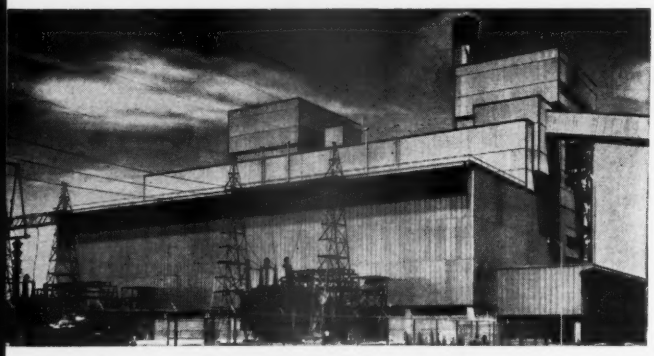
POTOMAC ELECTRIC POWER COMPANY

in the Nation's Capital



Why fine new power plants everywhere have Q-Panel Walls

Builders of new power plants in all parts of the country have specified Q-Panel walls for the following very good reasons: 1. Q-Panels are permanent, dry and noncombustible, yet may be demounted and re-erected elsewhere to keep pace with expansion programs. 2. Q-Panels are light in weight, thus reducing the cost of framing and foundations. 3. Q-Panels have high insulation value . . . superior to a 12″ masonry wall. 4. Q-Panels are quickly installed because they are hung, not piled up. An acre of wall has been hung in 3 days. For more good reasons for using Q-Panel construction, use the coupon below and write for literature.



Robertson

Q-Panels

H. H. Robertson Company

2424 FARMERS BANK BLDG. • PITTSBURGH 22, PA.

Offices in Principal Cities

Q-Panel walls grace the new Elrama Power Plant (above) near Pittsburgh. It was designed by Duquesne Light Company's Engineering and Construction Department. The Dravo Corporation was General Contractor.

Q-Panel walls (above) go up quickly in any weather because they are dry and hung in place, not piled up.

More than 32,000 sq. ft. of Q-Panels were used to enclose the impressive Hawthorn Steam Electric Station (left) of the Kansas City, Missouri, Power and Light Company. Ebasco Services, Inc., designed and built the plant.

Please send a free copy of your Q-Panel Catalog.

NAME

FIRM

ADDRESS

PUF1

Wonderful things are developing in West Central Ohio

For a complete picture... get a D P &L Annual Report

West Central Ohio comes sharply into focus when seen through the "lens" of The Dayton Power and Light Company's 1955 annual report. It's a picture of a million people who enjoy good incomes—who work in healthily diversified industries in cities and towns—and who live on 14,000 farms. These fortunate people live well. And naturally, their individual use of our services is above the national average.

This report gives you a picture of The Dayton Power and Light Company's sound growth, matching that of the area. May we send you a copy? Just write—

THE DAYTON POWER AND LIGHT COMPANY

BALANCE SHEET

	December 31	
ASSETS	**1955**	**1954**
Property and plant	$201,738,000	$193,188,000
Current assets	20,257,000	22,739,000
Other assets	576,000	570,000
	$222,571,000	$216,497,000
LIABILITIES		
Capitalization	$169,947,000	$166,397,000
Current liabilities	16,278,000	15,161,000
Reserves	36,346,000	34,939,000
	$222,571,000	$216,497,000

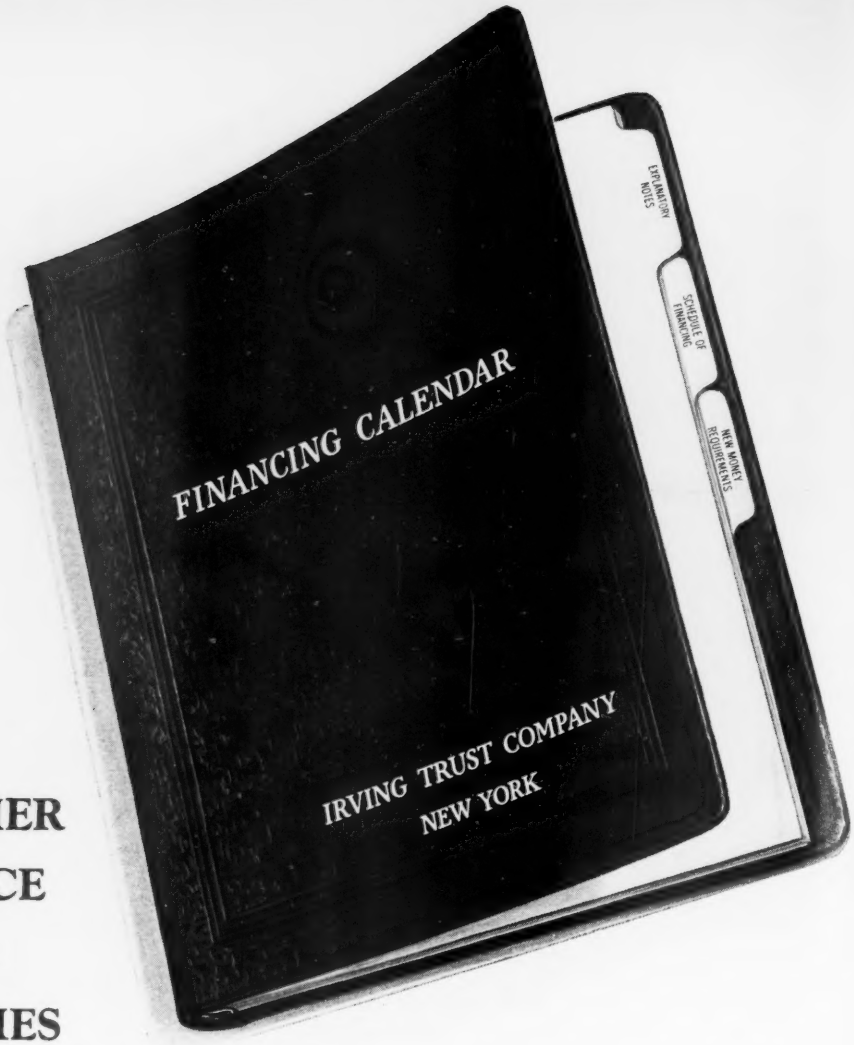
RESULTS OF OPERATIONS

	1955	**1954**
REVENUE	$ 68,327,000	$ 61,547,000
EXPENSES	56,392,000*	50,915,000
Gross income	$ 11,935,000	$ 10,632,000
INCOME DEDUCTIONS	2,355,000	2,193,000
	$ 9,580,000	$ 8,439,000
PREFERRED DIVIDENDS	949,000	949,000
Earnings on common stock	$ 8,631,000	$ 7,490,000
Number of common shares outstanding at December 31	2,619,256	2,600,059
Earnings per common share outstanding	$3.30*	$2.88

* *Includes taxes of $14,000,000—equivalent to $5.43 per share of common stock*

THE DAYTON POWER AND LIGHT COMPANY

25 North Main Street • Dayton 1, Ohio



ANOTHER SERVICE FOR UTILITIES

THE FINANCING CALENDAR

A comprehensive schedule of forthcoming security offerings, furnished regularly to utility companies to help prevent financing "log jams."

Better spacing of new offerings can mean higher prices to the issuers.

This service, available to the entire utility industry, has become feasible through the constant co-operation of the individual utility companies in furnishing their financing schedules.

IRVING TRUST COMPANY

One Wall Street, New York 15, N.Y.

Capital Funds over $126,000,000 — *Total Assets over $1,500,000,000*

WILLIAM N. ENSTROM, *Chairman of the Board* — RICHARD H. WEST, *President*

Public Utilities Department—JOHN F. CHILDS, *Vice President in Charge*

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

Triumph over Channel Chatter

THE NEW DIMENSION IN 2-WAY RADIO COMMUNICATION

uly a new concept in two-way radio communications—
result of years of extensive engineering and "on-the-job"
d testing. Now you can "get off the party line". No longer
it necessary to listen to a constant stream of "channel
atter". PRIVATE-LINE radiophone is *completely quiet*
ept when receiving a call from another PRIVATE-LINE
diophone in the same operation.

reduces missed and misunderstood messages—
operators hear only messages within their own operation.

increases overall efficiency—fewer errors mean more
productive utilization of time—fewer repeat messages—
more dispatched vehicles per hour . . . real advantages
during peak load periods.

increases area coverage—"coded squelch" circuit
automatically maintains optimum receiver sensitivity,
assuring maximum communications range at all times.

easier to operate—no additional buttons, lights, adjust-
ments or operational techniques—elimination of squelch
adjustments makes it even simpler to operate than con-
ventional two-way radio.

reduces operator fatigue—elimination of "channel
chatter" enables operators to concentrate on their jobs—
reduces tension, providing a more pleasant atmosphere
—increases job satisfaction.

- **selective**—This amazing new circuit opens the speaker only when receiving a properly coded transmission from a PRIVATE-LINE radiophone in the same operation. NUISANCE NOISE, MESSAGES FROM NEARBY SYSTEMS ON THE SAME CHANNEL, AND SKIP INTERFERENCE FROM DISTANT SYSTEMS *CANNOT* UNLOCK THE SPEAKER.
- **automatic**—does not require manual adjustment—electronically maintains feather edge sensitivity at all times.
- **silent**—coded subcarrier is inaudible—normal carrier-off noise burst or "squelch tail" is eliminated from the output of mobile receivers.
- **built-in**—tone circuitry is incorporated as an integral part of compact transmitter and receiver chassis.
- **precise**—Motorola's exclusive VIBRASENDER and VIBRASPONDER electromechanical resonant tone devices assure precision stability, selectivity, and reliability.

Technical men will be quick to note that PRIVATE-LINE radio does not employ a conventional tone-pulse selective calling system, but, instead, a continuous inaudible tone-coded subcarrier system which opens the speaker only for calls from transmitters in the system. Interfering signals cannot "trip-open" or "lock-in" the speaker, since only the properly tone-coded carrier keeps speaker open.

MOTOROLA
2-Way Radio

Private-Line

MOTOROLA Communications & Electronics, Inc.
4501 Augusta Boulevard Chicago 51, Illinois

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PF

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Organization _____

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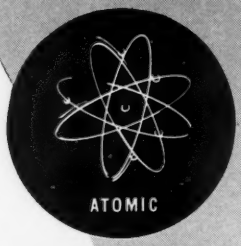
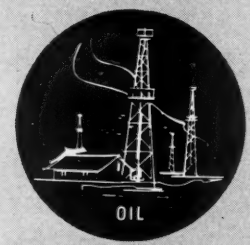
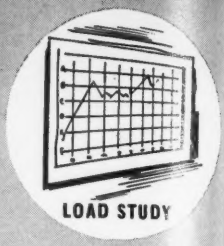
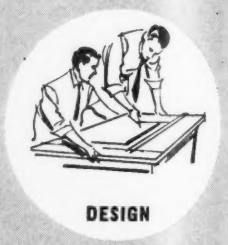
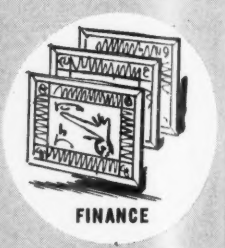
WHATEVER THE SOURCE











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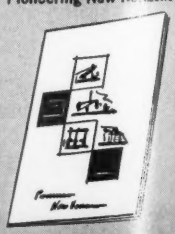
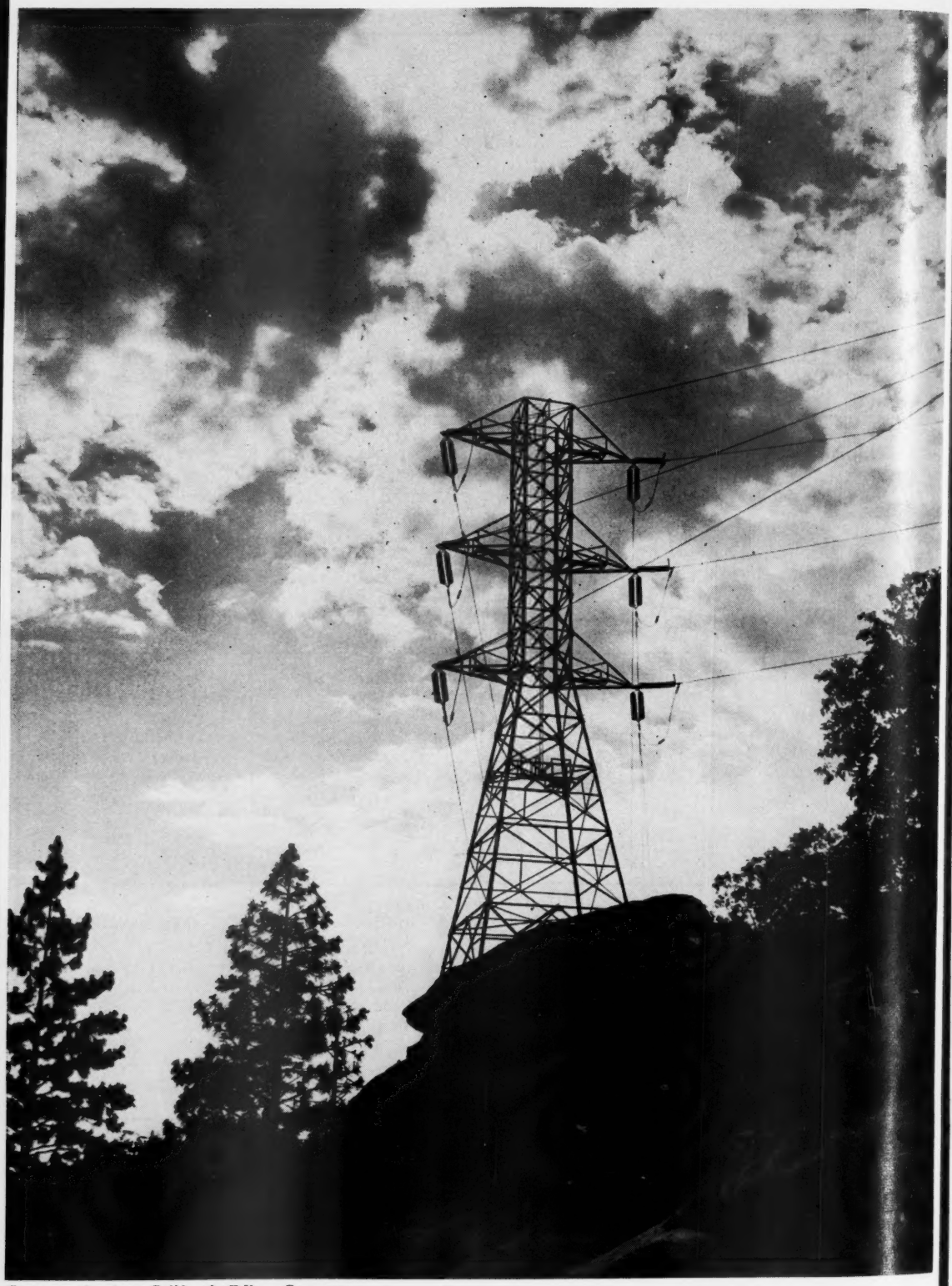


UTILITIES *A·l·m·a·n·a·c·k*

JUNE

Thursday—7 *Michigan Electric Association will hold annual convention, Mackinac Island, Mich. June 24-27.* ***Advance notice.***	**Friday—8** *National Fire Protection Association ends 5-day annual meeting, Boston, Mass.*	**Saturday—9** *American Institute of Electrical Engineers begins summer and Pacific general meetings, San Francisco, Cal. June 25-29.* ***Advance notice.***	**Sunday—10** *Advertising Federation of America begins national convention, Philadelphia, Pa.*
Monday—11 *National Association of Electrical Distributors begins annual convention, Atlantic City, N. J.*	**Tuesday—12** *National Community Television Association begins meeting, Pittsburgh, Pa.*	**Wednesday—13** *New York State Telephone Association ends 3-day annual convention, Schroon Lake, N. Y.*	**Thursday—14** *American Gas Association, Accounting Section, begins meeting, Hot Springs, Va.*
Friday—15 *American Society for Engineering Education will hold annual meeting, Ames, Iowa. June 25-29.* ***Advance notice.***	**Saturday—16** *American Home Economics Association will hold meeting, Washington, D. C. June 26-29.* ***Advance notice.***	**Sunday—17** *American Society for Testing Materials begins annual meeting and apparatus exhibit, Atlantic City, N. J.*	**Monday—18** *Canadian Electrical Association begins annual convention, Murray Bay, Quebec, Canada.*
Tuesday—19 *Maine, New Hampshire, and Vermont Telephone associations begin convention, Rye Beach, N. H.*	**Wednesday—20** *American Chief Engineers' Association will hold northwest power show, Minneapolis, Minn. June 28-July 1.* ***Advance notice.***	**Thursday—21** *American Society of Mechanical Engineers ends 5-day semiannual meeting, Cleveland, Ohio.*	**Friday—22** *Public Utilities Association of the Virginias, Accident Prevention Committee, begins conference, Roanoke, Va.*



Courtesy, Southern California Edison Company

"... Widening the Expressways of Electric Power! For America!"

(From the theme of the twenty-fourth annual EEI convention.)

Public Utilities
FORTNIGHTLY

VOL. 57, NO. 12 JUNE 7, 1956

Fair Play and the Pocketbook

Paradoxically, the electric utility industry has been singled out for discrimination and criticism notwithstanding the notable contribution it has made in expanding to meet unprecedented service demands and lowering rates over a period when other prices have skyrocketed. Here is a forthright plea for fair treatment of the electric utility companies.

BY HARLLEE BRANCH, JR.*
PRESIDENT, EDISON ELECTRIC INSTITUTE

A YEAR of travel about the country, talking with all sorts of people about the problems of the electric industry, convinces me that the average American is little moved by the ideological and philosophical aspects of the government power controversy. He is too busy with his own affairs—with the practical problems of living and making a living to be much impressed with purely theoretical abstractions, and, in addition, he is distrustful of what he considers "professor" and "lawyer" talk.

But, the average American—the man on the farm and the man on the street alike—is vitally concerned with fair play and what affects his pocketbook and his own economic opportunities and those of his family and friends.

It seems to me that the investor-owned electric companies must keep these basic attitudes in mind, and must gear their public relations programs to them, if they expect to win the popular support necessary for success in their fight against government-subsidized power.

*Also president of Georgia Power Company. For additional personal note, see "Pages with the Editors."

It is a heartening sign that more and more Americans in all parts of the nation are asking themselves: "Why should I and my neighbors be taxed and otherwise penalized in order that the federal government may provide underpriced and tax-exempt electric power for a privileged class of citizens or for a favored state or region?"

For too long a time this question was asked only by those in the electric industry, and by them only halfheartedly. But now there is an encouragingly larger number of people—newspaper and magazine editors, radio and television commentators, legislators, governmental administrators, teachers, farm and labor leaders, and thoughtful men and women in many fields of endeavor—who sense that the government's existing power policies involve injustices that are incompatible with basic American principles of equality and fair play.

The people are waking up to the fact that 80 per cent of the users of electric power in America—those served by the investor-owned industry—are the victims of discriminations in favor of a 20 per cent privileged class served by government-subsidized power agencies. They are beginning to see that the pocketbook and economic opportunities of the 80 per cent are directly and adversely affected.

The biggest job of the utility industry, I think, is to get more and more of the 80 per cent of our citizens and their representatives to realize the magnitude of these inequities and to take appropriate steps to eliminate them.

More and more of our people must be shown that so-called "cheap" government power is a myth—a myth based upon (a) tax discriminations, (b) outright government subsidies, and (c) phony bookkeeping. They must be made to see that government-financed power facilities are being steadily enlarged in America not only because some people would like to completely socialize this industry and others, but also because there are enough other citizens and their political representatives who, despite professed loyalty to the American system, are nevertheless willing to vote for governmentalized power in return for special privileges and favors, including power subsidies and tax-financed construction contracts and other personal or political considerations.

This latter group is interested mainly in "something for nothing." But in America a special privilege for one person must inevitably be secured at the expense of another. This fact has been conveniently overlooked while members of this group have worked with appealing and altruistic declamations, both within the government and outside, for socialized power. Their loyalty is not questioned, and it is doubtful if many really favor Socialism. Nevertheless their endeavors have been applied in that direction and in disregard of the resulting discrimination against their neighbors served by the tax-paying and regulated electric companies.

The great tragedy is that, without seeming to realize it, they are contributing to the creation of a philosophy of privilege which threatens all of our democratic institutions and the free enterprise Capitalism which has made ours the strongest and most prosperous of nations.

The most hostile critic of the industry would hardly contend that the electric utilities have failed to meet their respon-

sibilities to the American public. If he did, he would be contradicted by the record. For example, during the 10-year period from 1946 through 1955, generation of electricity by all components of the industry increased by 323 billion kilowatthours, or 145 per cent. Sales of kilowatthours to ultimate consumers increased 147 per cent and generating capacity 140 per cent. During this decade the plant investment and property of the investor-owned electric companies increased from $12.5 billion to $30 billion and their construction expenditures averaged $2.1 billion a year. Reserve generating capacity at the end of 1955 was upwards of 20 per cent. Most leaders of the industry anticipate that construction expenditures during the next ten years will exceed the 1946-55 figures by at least 50 per cent.

It is significant that the only real "power shortages" which have occurred in America in recent years have been in areas where tax-supported agencies have assumed utility responsibility.

DESPITE this remarkable record on the part of the investor-owned companies, government-subsidized power continues to expand. It expands by means of tax exemptions and operation of the "preference" clause in the Flood Control Act of 1944 and other statutes including the amended atomic energy law.

The Hoover Commission summarized the extent and impact of these discriminatory subsidies and tax exemptions as follows:

> From the standpoint of financial return to the federal government, federal water resources and power projects which produce, or could produce, revenues are not operated according to sound business principles, and do not produce a return fairly related to their value, nor does the federal government uniformly require adequate contributions, either for the use of its money for capital outlay or for operation and maintenance costs.
>
> In the disposition of federal power, the "preference clause" which gives preferences in sales of federal power to co-operative and public agencies, has been used to justify extension of government-owned transmission systems, and to favor one group of citizens at the expense of others. The "preference clause" has also been used in attempts to justify power sales at rates well below its fair value and below its cost.

An effort, originally undertaken in

¶ "THE *people are waking up to the fact that 80 per cent of the users of electric power in America—those served by the investor-owned industry—are the victims of discriminations in favor of a 20 per cent privileged class served by government-subsidized power agencies. They are beginning to see that the pocketbook and economic opportunities of the 80 per cent are directly and adversely affected. The biggest job of the utility industry, I think, is to get more and more of the 80 per cent of our citizens and their representatives to realize the magnitude of these inequities . . .*"

the national interest, has greatly expanded the activities and personnel of the federal government, has become unbusinesslike and wasteful, and is using the tax money of all for the benefit of the few.

TWENTY-THREE cents of every dollar paid for electricity by customers of the investor-owned companies goes for the support of federal, state, and local governments. In addition, investors in the securities of electric companies are required to pay income taxes on their dividends and interest and, in some instances, property taxes on the value of their holdings. These additional taxes raise the total "take" by government to 25 cents out of every electric service dollar paid by the customers of these companies.

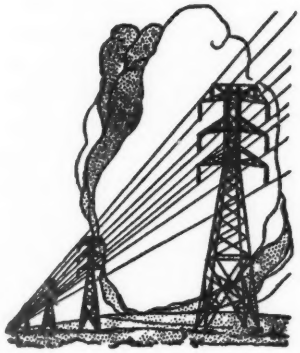
Specifically, the investor-owned electric companies and their customers paid more than $1.6 billion of taxes last year in their electric bills. Taxes were the largest single item of the companies' expense, amounting to more than operating wages and salaries, more than fuel burned in generating plants, and more than dividend and interest payments to investors. Federal taxes alone exceeded $1 billion for the first time in history. The remaining $600,000,000 went to pay state and local taxes.

Since the 20 per cent group served by public power agencies do not pay in their electric bills their fair share of the costs of government, this loss must be made up by the taxpayers generally. The potential federal taxes from electric power lost through tax exemption of the 20 per cent now exceeds $350,000,000 a year. Local and state tax exemptions must be added to this total.

There are other subsidies in power generated at federal hydroelectric projects. Fixed charges assignable to power are generally understated through overgenerous allocations of costs to navigation, flood control, and other nonreimbursable functions. Interest rates charged to the projects and reflected in the rates paid by customers of the subsidized groups in many cases are lower than the actual cost of money to the federal government.

PREFERENCE clauses, included in over a dozen pieces of national legislation, result in additional discriminations. In general, these statutes provide that governmentally produced power shall be sold in such manner as to insure the widest possible distribution at the lowest cost to ultimate consumers in accordance with sound business principles, and that preference, in carrying out these objectives, is to be given to public bodies and co-operatives. Through a series of one-sided interpretations, the primary objectives stated above have been lost sight of and weight is given only to the preference provision. As a result, the subsidized power groups have received a virtual monopoly of power from federal projects at rates well below fair value and at times even below cost.

The proportion of total federal power which is going to preference customers is constantly increasing. In 1946 preference customers received 38.3 per cent of the power, while investor-owned companies got 33.3 per cent. In 1953 preference customers received 52.2 per cent and investor-owned companies only 18.5 per cent. The trend is obviously toward giving the preference customers a monopoly of this power despite the fact the generating plants are paid for by all of the taxpayers. For example, the investor-owned utilities



Discriminatory Effect of Preferences

"In the atomic era now dawning for America, the citizen or state given a preference in electric power generated at a tax-financed plant from government-owned nuclear materials, will enjoy an almost insurmountable advantage over a less favored citizen or state. It will not be possible to extend these privileges to all of our citizens without completely socializing the industry and adding vastly to the nation's financial burdens. Thus, the preference clause, and other privileges now enjoyed by 20 per cent of American power consumers, may have a disastrous effect upon the pocketbooks and the economic opportunities of the 80 per cent majority of our people."

in the Bonneville Administration area have been informed that no firm power from that project will be available for their customers after 1960 unless further plants are built.

Preference has now been extended to the atomic energy field. The Atomic Energy Act of 1954 gives the subsidized power groups preference rights to surplus electricity produced at government atomic energy installations. In July of last year the first commercial electricity produced from one of the government's experimental atomic energy reactors went into the system of an investor-owned electric company in New York state. The power went initially to the utility's customers only because three subsidized power groups in the area were not then able to arrange for transmission. Subsequently, the AEC announced that contracts had been signed with two of the three preference customers for the sale of the entire output to them. The two municipalities were given seven extensions of time in which to submit proposals.

In the atomic era now dawning for America, the citizen or state given a preference in electric power generated at

a tax-financed plant from government-owned nuclear materials, will enjoy an almost insurmountable advantage over a less favored citizen or state. It will not be possible to extend these privileges to all of our citizens without completely socializing the industry and adding vastly to the nation's financial burdens.

Thus, the preference clause, and other privileges now enjoyed by 20 per cent of American power consumers, may have a disastrous effect upon the pocketbooks and the economic opportunities of the 80 per cent majority of our people. When this is realized, the average American will demand fair play and protection for himself and his neighbors. It is up to the investor-owned utilities to see that he does not wake up too late.

It is also up to the industry to suggest ways in which present discriminations may be eliminated. Any program suggested by the industry must be fair to all classes of our people and easily understood. The development of such a program, and its successful advocacy, will require a degree of statesmanship such as our industry has rarely been called upon to display.

THE cure for tax inequality is inherently simple—remove the exemptions of the favored minority so that everyone pays his proper share. Taxes are levied to pay the necessary costs of government and these burdens should be impartially borne by all citizens. No one is penalized by being required to pay his fair share of the cost of government, whether the payment is made as part of an electric bill or in some other manner.

The cure for preference discriminations also is inherently simple—sell the power at the point of generation at its market value to power organizations in proportion to the number of residential, commercial, and rural customers served by each and without discriminating between them merely on the basis of corporate form. If the power is sold at its fair market value, arbitrary subsidies in favor of one group at the expense of others will end and the federal Treasury will recover its full investment of tax moneys.

As long as the issue of government-subsidized power *versus* investor ownership is thought of as an academic question, we will never arouse the voters to the point where they will demand that the federal statutes be changed so as to restore equity in this great field of enterprise. The great challenge and opportunity, it seems to me, are to interest the 80 per cent of power consumers in the fact that they are the ones who are being given second-class treatment and that this second-class treatment directly affects their pocketbooks. As a matter of fact, these citizens have much more at stake than simply their purchases of electric energy. They are the actual owners of the electric industry, and they are finally becoming aware of this. But there are many who still must be shown that the industry belongs to the people of America—indeed, that it is the most public of American enterprises.

Today the industry has about four million direct stockholders. In addition, 75 per cent of all families have some form of life insurance and life insurance policyholders, through their insurance investments, own about 60 per cent of all utility debt securities and have provided about 25 per cent of the total capital funds of the industry. Pension funds, investment

trusts, and other group holdings have increased this public ownership.

RECENT debates on the floors of Congress and before congressional committees—even debates which were seemingly lost by supporters of the free enterprise electric system—have opened the eyes and enlightened the minds of American voters regarding the real stakes in the government power controversy. Renewed efforts are now being made to obscure the impact of tax-subsidized power upon the pocketbooks of most Americans. In the face of this effort, the investor-owned companies must redouble their efforts to obtain fair treatment for their customers as well as themselves.

EEI 1956 CONVENTION TIMETABLE, ATLANTIC CITY, NEW JERSEY

Sunday, June 3rd

12:00 NOON Registration, lobby, Hotel Traymore (to 6 P.M.).

Monday, June 4th

8:30 A.M. Registration, lobby, Hotel Traymore (to 12 NOON).

11:00 A.M. Registration, main entrance, Convention Hall (to 5 P.M.).

2:30 P.M. First General Session, Convention Hall ballroom.

5:00 P.M. Reception, Colonel and Mrs. H. S. Bennion, Carolina Room, Chalfonte Hotel (to 7:00 P.M.).

Tuesday, June 5th

8:30 A.M. Registration, main entrance, Convention Hall (to 5 P.M.).

9:30 A.M. Second General Session, Convention Hall ballroom.

12:30 P.M. Ladies' luncheon, Claridge Hotel.

2:30 P.M. Third General Session, Convention Hall ballroom.

2:30 P.M. Ladies' Fashion Show, presented by Henri Bendel, and entertainment by Cornelia Otis Skinner, Warner Theater, boardwalk.

Wednesday, June 6th

8:30 A.M. Registration, main entrance, Convention Hall (to 5 P.M.).

9:30 A.M. Fourth General Session, Convention Hall ballroom.

2:30 P.M. Fifth General Session, Convention Hall ballroom.

8:30 P.M. Presentation of the Charles A. Coffin Award, Warner Theater, boardwalk, followed by a special program of entertainment, arranged through the courtesy of Westinghouse Electric Corporation.

The Challenge of the Legal Profession

There is much current discussion of freedom and threats to freedom in certain fields. But the gravest menace to freedom may lie in quarters which are not stressed or widely discussed—the freedom of private enterprise, of local initiative, of education. The dangerous drift to centralized government control by unlimited federal powers of taxing and spending could undermine the very basis of all of our free institutions. This is a timely warning against such unseen erosion of safeguards for our most treasured liberties.

By the Honorable E. SMYTHE GAMBRELL*
PRESIDENT, AMERICAN BAR ASSOCIATION

In my current travels in all parts of our country, I am endeavoring to discuss the many problems which now beset our profession and the public. Human freedom transcends all else in importance. The deepest issue of our time is whether civilized peoples can and will maintain a free society.

In a strife-ridden world, America stands as a beacon for freedom-loving peoples everywhere. For some, the lamps of freedom have never been lighted. For others, for whom the lamp once burned, the light is out. We are the stewards of this freedom. To guard it calls for constant vigil. We must maintain in this country the example of a successful democracy, where people can live out their lives in freedom of expression and of religion and of opportunity. If we should fail, we could carry down with us the hopes and yearnings of all mankind.

Alexander Hamilton first sounded our challenge. In the first number of the *Federalist Papers,* he said, "It seems to have

*Also, former chairman, Section of Public Utility Law, American Bar Association. The preferatory material in this statement dealing with legal education has been omitted. For additional personal note, see "Pages with the Editors."

been reserved for the people of this country, by their conduct and example, to decide the important question, whether societies of men are really capable or not of establishing good government from reflection and choice, or whether they are forever destined to depend for their political constitutions on accident and force." The ancient challenge is still with us, for the battle for freedom can never be finally won—it can only be finally lost. Victory gives us only the chance to fight again.

WHY is it that only the people occupying less than 10 per cent of the surface of the earth have had what might be termed adequate food and clothing and the other comforts of a full life? The answer is that they are the people who set themselves free — free from physical restraint; free from ignorance and superstitions; free from the illusion that rulers had infinite wisdom; free from political doctrines that held men in bondage to governments; free to work out their own destiny with their own minds and their own hands and in their own way, subject only to rules that would prevent them from interfering with the freedom of others. In the process of the emancipation of that portion of humanity, there has been released in society a driving force, an individual initiative, and an aggregate accomplishment previously unknown in the history of mankind.

For three hundred years the American people have cherished the spiritual concept that the rights of man to freedom are personal to him from the Creator, not from the state. It was written in our Declaration of Independence. This concept has guided us not only to a life of human dignity, but to material abundance.

The great truths of humanity do not spring newborn to each new generation. They emerge from long experience. They are the gathered wisdom of the ages. They are renewed in times of conflict and of danger. In this sense, the current challenge to our political institutions may prove to be a kind of blessing in disguise. The mystery, grandeur, and tragedy of history is man's surest guide in troubled times. If the times in which we are now living do not bring a fuller understanding of the great traditions of our civilization and a deeper desire to affirm them, we are not worthy of our heritage.

TODAY there are vast uncharted frontiers—physical, spiritual, and intellectual—standing as our constant challenge. We may well lose our will and our ability to cope with these challenges if we develop and accept the habit of being satisfied with the meager crumbs of material security which some form of benevolent government would dole out to us. To the extent that we permit ourselves to be so dependent upon government that we can no longer think or achieve on our own, dependent upon government for those things which traditionally we have provided for ourselves, we defeat the very meaning of democracy and permit government to rule rather than to serve the individual. By every step we take toward making the government caretaker of our lives, we move toward making it our master.

As we face the challenge of today's frontiers, the prospect of an era of unprecedented growth, the threat that looms largest is the philosophy of despondency and despair reflected in the increasing clamor for security. This alien urge for protection from the normal processes of

change and development can lead only to stagnation and decay. Security is the antithesis of growth. Discovery and improvement, whether in the field of ideas or in the realm of economic activity, must not be stifled in the name of security. Only by confining each man to a predetermined mold can any of us be secure. If each man is to be free to shape his own destiny, to realize his own potential, to think and build, then each must assume a measure of risk. Growth is change, and change brings dislocation. One man's growth is another's insecurity. If our national income is doubled, no doubt the makers of kerosene lamps will suffer, since more people will use electricity. So, a cherished belief may be destroyed by the revelation of some undiscovered truth. Resistance to change for the sake of security is a product of fear and of lack of faith. It has no place among a dynamic people dedicated to the principles of ordered freedom.

We should recognize, too, that this preoccupation with security from competitive forces is the prime characteristic of the ideologies against which we are struggling. It is the Marxist dialectic that holds out the false promise of a Utopia created by a stroke of the pen or a quick revolution, a Utopia in which all are happy, equal, and secure. It is the communist philosophy that seeks the millennium in an eternal, fixed, stable, never-changing social order. In such a state, no man need suffer from insecurity, for no man is free to grow. Whether the plane is intellectual or economic, resourcefulness is suppressed, innovation is prohibited, and development forbidden. The advocates of the socialist state have ignored the truism pointed out by John Stuart Mill when he said, "A state which dwarfs its men, in order that they may be more docile instruments in its hands even for beneficial purposes, will find that with small men no really great thing can be accomplished."

The ancient civilizations of China, Egypt, Athens, Rome, and Spain—the fall of all these great societies teaches us that in stagnation there is only decline. The siren call of destruction that passes under the name of security is revealed by Alfred North Whitehead when he observes, "A race preserves its vigor as long as it harbors a real contrast between what has been and what may be . . . without adventure, civilization is in full decay."

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¶ "Today *there are vast uncharted frontiers—physical, spiritual, and intellectual—standing as our constant challenge. We may well lose our will and our ability to cope with these challenges if we develop and accept the habit of being satisfied with the meager crumbs of material security which some form of benevolent government would dole out to us. To the extent that we permit ourselves to be so dependent upon government that we can no longer think or achieve on our own, dependent . . . for those things which traditionally we have provided for ourselves, we defeat the very meaning of democracy and permit government to rule rather than to serve the individual.*"

THE cry for security is the call of the fearful and the faithless; the God-fearing man who is self-reliant and conscious of his powers calls for freedom, not security. The real security will be found not in repression, but in giving men free rein for their drives and their capacities. It is one of the paradoxes of labels that in common usage the man who puts his faith in eternal progress and growth is tagged a conservative, while the man who espouses the cause of the unchanging and stagnant social order is counted as a progressive.

The American creed is premised upon a simple belief: that each human being is a creature of God and endowed by Him with the dignity of individuality. Each must be free to shape his own integrity and to seek his own destiny. It follows that he may not be treated as a statistic on an economic or sociological chart. Respecting this right of the individual man to realize his own potential, we have pledged ourselves in the most solemn compacts of government to allow to our fellows the greatest freedom of choice possible in the exigencies of living together. Where choice must be limited to preserve the freedom of others, we have sought to assure that each shall have the greatest possible voice in making the collective decisions that will control his life, by keeping the powers of government as close as circumstances will permit to those subjected to the power.

We have chosen to erect the structures of government in the belief that no national government should do what the states can do, that no state should do what the local government can do, and that *no* government should do what a man can do for himself. The movement for greater authority for the cities, the concern for states' rights, and the demand for some limitation upon the federal treaty power, all are variations on this persistent theme —that government should not be removed from the hands of the governed, that choices which must be made collectively and not individually should be made by the smallest feasible group according to its own needs.

BY so doing, we have sought to preserve to each the freedom to grow, to employ his God-given powers and talents as he, in the teachings of his conscience, believes best. Our concern rises above the creation of a favorable material environment in which men can dwell in comfort; it is for us the supreme function of government to keep clear the paths for the enlargement of human personality, the realization of man's dignity, and the recognition of individual integrity.

It is almost trite to observe once more that these principles were enshrined in the Constitution by the wise men who gathered to lay the foundations for the government under which freedom has flourished and our people have prospered. The central government was to be entrusted with limited and specifically delegated powers. Only those matters that required uniform treatment, only those problems that demanded a national solution, were delivered up to the centralized power.

The great catalogue of human liberties contained in the first ten amendments to the Constitution endeavored to transmute the dignity of man into a living reality. In the turmoil of our time several of these inalienable rights have been brought to the forefront of our national conscience. Freedom of speech and of the press, the

The Right of Privacy

"THE right of man to be let alone has been relegated to a lower order in the scale of our common values. But it is a fundamental article of our national faith that we shall not destroy the ancient landmarks in our effort to accommodate the demands for government authority to cope with modern needs. Our principles of freedom must stand as fixed and immovable monuments above the ebb and flow of the currents of change. Paramount and above all other considerations, we must channel the flow of progress within the order and limits of the law, and not sacrifice principle to expediency in a search for easy solutions to the problems that beset us."

right to assemble peaceably, and the privilege against self-incrimination have all found their staunch and vocal advocates. We have heard much of the first eight amendments, but in the clamor of controversy over these our people seem to have suffered from a mass amnesia concerning the Ninth and Tenth Amendments.

IN the structure of our institutions of government, we have put faith in the ability of a man to decide what is good for himself. But we have reposed less faith in his ability to decide what is good for others. We are skeptical of the wisdom of a transient and temporary majority, and we are suspicious of those who claim the prescience to divine the common good and to lay down the patterns to which all thought and all activity will be made to conform to achieve that good.

We have recognized that the capacities, drives, wants, and needs of the human being are beyond the powers of any man or group of men to comprehend and encompass at any single time, and that only experience can provide reliable guides. We accordingly have guaranteed to the individual the right to experiment, to be different, to choose an untried path which the rest of us may regard as sheerest folly. In imposing limitations upon the powers of government in the interests of individual freedom, we have sacrificed a measure of governmental efficiency. But this sacrifice is offered to achieve what we are proud to believe is a higher good.

That incomparable observer of the American scene, de Tocqueville, wrote over a century ago:

> Democracy does not give the people the most skillful government, but it pro-

duces what the ablest governments are frequently unable to create; namely, an all-pervading and restless activity, a superabundant force, and an energy which is inseparable from it, and which may, however unfavorable circumstances may be, produce wonders. These are the true advantages of democracy.

But for all our material abundance, the real strength of America, and the author of its plenty, is the spiritual and moral force of our ideals. Thomas Jefferson, in the troubled year 1782, asked the fundamental question, "Can the liberties of a nation be thought secure when we have removed their only firm basis, a conviction in the minds of the people that these liberties are the gift of God?" The power of each man to find his own destiny and to seek his own salvation is the essence of the teachings of the world's great religions, and the wellsprings of our political beliefs lie deep in the heart of our spiritual faith. The reawakening of people everywhere to the primacy of things of the spirit reminds us once more of individual responsibility and of the dangers of assuming to judge our fellows. We are reminded, too, that no man is so all-seeing and all-wise that he can create for the rest of us an earthly paradise, and that at the same time man is not a helpless mechanical automaton, inexorably directed by the forces that surround him. We are admonished to love and to respect our fellow men, and to walk humbly in the sight of God.

In the current state of world unrest, the struggle between Communism and freedom is not alone a war of economic and military power. The greater war is the war of ideas, a spiritual war of moral and religious values. Our best weapon in this battle is to instill the spirit of freedom and faith in the hearts and minds of people everywhere. Even in this age of discovery, when science has found new sources of energy of almost incomprehensible magnitudes, the forces of the physical world pale in comparison with the power of man's great religious and moral ideals. It is this power we have invoked to preserve and to spread throughout the world our precious heritage of freedom and dignity of the individual.

History teaches that liberties are seldom lost in a frontal attack leveled against them. The threat lies not in open challenge, but in apathy and complacency. Unused, our great freedoms may atrophy and weaken, and their enemies, through cunning propaganda and small but steady encroachments, may overwhelm us unaware. I am not so much concerned, then, about those liberties for which the defense has already been rallied. But there are other principles, no less basic to our form of government, which have been largely ignored.

We have submitted more and more in recent years to governmental control of the pursuit of our livelihoods. We look more and more to government to satisfy our every want and need. We have made government the caretaker of increasing shares of our lives. And we have relinquished the precious right of man to make those choices which, if he is to be a man, he must make for himself. The right of man to be let alone has been relegated to a lower order in the scale of our common values. But it is a fundamental article of our national faith that we shall not destroy the ancient landmarks in our effort to ac-

commodate the demands for government authority to cope with modern needs. Our principles of freedom must stand as fixed and immovable monuments above the ebb and flow of the currents of change. Paramount and above all other considerations, we must channel the flow of progress within the order and limits of the law, and not sacrifice principle to expediency in a search for easy solutions to the problems that beset us.

To me, one of the gravest threats to American ideals is presented by the inordinate and pervasive power of the purse, the power of bounty, the power to spend. To extract $46 billion in income taxes alone from the national economy is necessarily to exert a force over many areas of activity which earlier generations had confidently believed to be immune from government interferences or subject only to the power of their own states. Such tax collections far exceed the legitimate costs of operating the federal government within its constitutionally delegated bounds. The excess remains to be dispensed by the holders of political power in the form of subsidies, bounties, benefits, and allowances. By taxing us and using the proceeds to purchase compliance with its wishes, the federal government may arrogate to itself unlimited control of our lives. It is one of the hard facts of life that power over the purse strings often carries power over the minds of men.

When government is the consumer of one-fourth of all the goods and services provided by an abundant economy, when it dispenses vast additional sums by way of bounty, none of us is completely free from its influence. Government by largess has begotten a centralized authority of monstrous proportions, and it has at the same time broken down the fundamental design within that central government for forestalling the corruption of absolute power. The doctrine of separation of powers, the system of checks and balances, teaches that neither the legislature nor the executive should be servile to the other. It was our plan that the legislative branch, representative of and responsive to the popular will, would formulate policies which the executive would put into effect. But through the power of patronage, the plums of public works, and the bounties of benevolent paternalism, the legislature has been brought to heel more than once in recent decades. Too often the executive has determined the national policy, and at best

¶ "The *best safeguard against the constant threat of the enemies of liberty to pervert and enslave the minds of our youth by mass propaganda is for each state, county, or school district to liberally support a sound program of public education on a decentralized basis, under local control—free from federal manipulations, free from subversive control. Reassurances that state and local schools receiving federal support will be protected in their autonomy are not enough. The folly of relying on such is indelibly written in the abuse and misuse of federal powers in the past twenty-five years.*"

the legislature has served as a censor of his programs, and, at worst, as a rubber stamp. Ironic though it may be, the powers by which the legislator has been brought down by the administrator were conferred by that same legislator.

At the same time, the powers constitutionally reserved to the states have been gradually usurped through this power to disburse, through what are euphemistically referred to as "grants-in-aid." Under more than forty separate programs, the governments of the states have been offered the bounty of the federal treasury in return for the surrender of their constitutional rights to provide for the interests of their peoples in their own way. The notion that the central government is somehow providing aid when it drains the sources of tax revenue and doles out a minor share to the states upon bureaucratic conditions is a mischievous fiction.

A government is not a productive enterprise—it does not create wealth, it does not contribute to the sum total of economic goods. If there is a single well to fill a community's needs for water, the man who drains it and then distributes the water to his fellow townsmen upon conditions he chooses to lay down is not furnishing aid to his neighbors. Recognizing this simple truth, the legislature of the state of Indiana in 1947 resolved:

> We have decided that there is no such thing as "federal aid." We know that there is no wealth to tax that is not already within the boundaries of the 48 states. So we propose henceforth to tax ourselves and take care of ourselves. We are fed up with subsidies, doles, and paternalism.

Ideally, each person or, more accurately, each family should control the spending of what it has earned. In the long run, no one else can comprehend as well the family's needs and aspirations, and no one can see to it that the fruits of their labor are put to better use. Responsibility for earning begets responsibility in spending. The farther the power to spend is removed from the person whose toil and sweat created the power, the greater the likelihood of economic waste, to the detriment of our common standard of living and to the benefit of no one. The concentration of vast wealth in the hands of a remote and centralized government penalizes thrift and encourages waste. The money is there to be spent, the thinking runs, and unless we get our share someone else will. A community that would reject out of hand a proposal that a public building should be financed by voluntary contributions or by a tax laid by the townspeople upon themselves will nevertheless clamor for federal funds for the purpose. It is difficult to respect money that has come from someone else's pocket.

Opposing candidates for public office often vie with each other in offering government bounties in return for political support, bounties which have been collected from these same deluded individuals. More and more we are moving in the direction of appropriating the fruits of all our endeavors to a community storehouse upon which we shall all be dependent for our sustenance.

By pursuing policies which make it useless if not impossible for an individual to earn and to save any substantial amount, the government has restricted the availability of the capital which serves as

Divining the Common Good

"IN the structure of our institutions of government, we have put faith in the ability of a man to decide what is good for himself. But we have reposed less faith in his ability to decide what is good for others. We are skeptical of the wisdom of a transient and temporary majority, and we are suspicious of those who claim the prescience to divine the common good and to lay down the patterns to which all thought and all activity will be made to conform to achieve that good."

the lifeblood of the economy and provides the tools of our callings. Control of capital carries with it control of initiative and innovation as well. As the eventual sole source of capital funds, the government would find itself at the pinnacle of the socialistic ideal, the owner of all the means of production in the economy.

Unchecked, this exaltation of the state over the individual and this disregard for the right of each to choose for himself can lead in but one direction.

LIBERAL education is the keystone of freedom. The search for truth is, as it has always been, the noblest experience of the human spirit. We are false to ourselves and to our best instincts if we turn our backs on truth or close our eyes when it beckons.

But the recent White House Conference on Federal Aid to Education troubles me. In the long view it poses a serious threat to democracy and freedom. Although we may have great respect and genuine affection for the present occupant of the White House, we should remember that executive changes do take place, and we should ponder well the lessons to be learned from Hitler's complete domination of the German people through the perversion of education.

WHILE the unequal distribution of wealth throughout the 48 states might suggest federal aid to education, it would be error to expose the direction of the educational systems of the several states to the influences of a federal board or bureau which ultimately would attempt

to supervise teachers, prescribe curricula and subject matter, and otherwise condition the education of our oncoming generations. I feel very deeply that the independence of education is essential to the life of a democracy.

The best safeguard against the constant threat of the enemies of liberty to pervert and enslave the minds of our youth by mass propaganda is for each state, county, or school district to liberally support a sound program of public education on a decentralized basis, under local control — free from federal manipulations, free from subversive control.

Reassurances that state and local schools receiving federal support will be protected in their autonomy are not enough. The folly of relying on such is indelibly written in the abuse and misuse of federal powers in the past twenty-five years. Someone has wisely observed: "Whose bread I eat, whose song I sing." To allow our fine independent public school systems to become hopelessly addicted to, or dependent upon, federal aid would be nothing short of a national calamity.

UNLESS men of wisdom and devotion to our spiritual ideals assume their rightful place of leadership, the shining promise of a new age of greatness will remain unfulfilled, and the ever-increasing trend toward unlimited government may advance beyond recall. The call of the hour is for statesmen. Gone is the day of the wild-eyed zealot, the rebellious and irresponsible reformer, and the technician of sterile brilliance. The need today is not for panaceas but for prudence. Reinhold Neibuhr, the theologian, reminds us, "The tragedies in human history, the cruelties, the fanaticisms have not been caused by the criminals . . . but by idealists who did not understand the strange mixture of self-interest and ideals which are compounded in all human motives, by reformers who fail to understand the necessities of personal reformation . . . by the wise who do not know the limits of their own wisdom, and by the religious who do not know that in 'God's sight no man living is justified.'"

Never before have the complexity, the diversity, and the interdependences of life so defied simplification and solution. The call in such a day is for men of judgment, able to rise above selfish concerns and allegiances, men who know the virtues of restraint, orderliness, and moderation, and who will heed the lessons of history. The need is for men who will blend self-discipline with God-fearing humility and a warm respect for the rights of their fellow men.

The stature of statesmanship is not a commodity to be purchased. It cannot be gained by artifice or contrivance to attract public attention. It is a justly earned recognition of power controlled by conscience and a sense of public duty.

I DO not mean to paint the picture too darkly. The people of America still enjoy a degree of liberty unsurpassed among the nations of the world, and they share a material abundance unknown to the past. There are signs of returning sense of responsibility and of a renewed respect for principle in the federal administration and among the leaders of both great political parties.

Operation Alert—1956—for Electric Utilities

Electric companies and other utilities are expected to join with civil defense organizations in testing their emergency mobilization plans during a national alert scheduled for July 20-26, 1956. In some areas full-dress tests of electric power facilities under emergency conditions will be staged. For example, the southwestern and middle western region companies are reportedly already well organized to keep power loads steady through a system of interconnections. How these plans are being encouraged by the Interior Department is told in the following account.

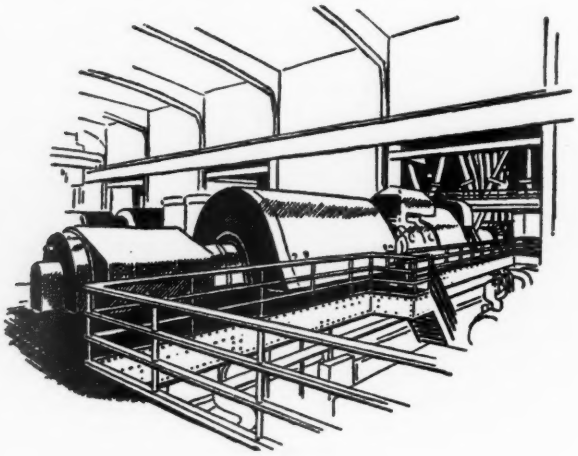
By the Honorable FRED G. AANDAHL*

Responsibility for the development of a national plan assuring the availability of electric power for defense purposes during an emergency rests in the Secretary of the Interior. Both the Office of Defense Mobilization, known as "ODM," and the Federal Civil Defense Administration have transferred this authority to the Interior Department.

Under Federal Civil Defense Delegation No. 4, the Secretary of the Interior is responsible for planning a national program, providing technical guidance to the states, and directing federal activities concerned with "the emergency restoration of electric utility service to attacked areas," and to make provision for "adequate electric utility service to support areas."

*Assistant Secretary of Interior. Formerly governor and Representative in Congress from North Dakota.

A department-wide delegation from ODM was received by Interior in



November, 1954, which summarized previous orders. It provided:

> The Secretary of Interior will be responsible for the development of preparedness measures relating to those industries assigned to him by and pursuant to Executive Order 10480 as amended and Defense Mobilization Order—DMO-I-7 and DMO-VII-5. These industries include: (1) solid fuels; (2) petroleum and gas, including pipelines; (3) electric power; (4) metals and minerals for assigned aspects of production and processing. . . . [Source: (DMO-I-13).]

The more recent delegation, made by Federal Civil Defense Administrator Val Peterson and approved by President Eisenhower on November 22, 1955, completed the transfer of emergency electric power co-ordinating authority to the Secretary of the Interior.

Most people in the electric utility industry are familiar with our delegated responsibilities and the actions we have taken under DMO-I-13. Here we are concerned mainly with Civil Defense Delegation 4.

What does this delegation mean? What is its purpose? Basically, it means that, in the event of an emergency of near or actual catastrophic proportions, Interior would be bound to see that any target or supporting areas would receive power. This power would be from whatever source that might be available, so that civilian survival, military offense, essential defense, and defense-supporting activities could be continued or resumed. This is, of course, a tremendous responsibility. But it is one to which the Interior Department must give attention in the interest of preparedness.

It should be stated, at the outset, that this activity on our part has not been inspired by any new or recent developments on the international horizon. It stems entirely from the outstanding lawful responsibilities and authorities delegated to Interior as a part of the over-all national defense program. The carrying out of these duties has now been planned and organized to the stage where a public announcement is warranted.

Immediately following the delegation of authority last fall a series of area meetings was called in which personnel of the Department of Interior met with representatives of the electric utility industry.

There were outlined at each meeting the department's tentative plans for carrying out the delegation. In the course of these sessions our people explored with the utilities whatever ideas seemed feasible in a joint endeavor to develop the most practical method of dealing with the over-all problem. We welcomed suggestions. These meetings were primarily with representatives of class I utilities because they are the major producers and transmitters of power. They would, quite naturally, bear the greatest responsibility in the event of an emergency.

In each region we discussed the need for a representative—one man—through whom to work and co-ordinate national planning. For the sake of simplicity and efficiency, the committee system was ruled out. Each co-ordinator or director would be backed up by a deputy director and an alternate deputy. This would insure, since no region or locality can be considered safe from attack, that there would be per-

¶ *"UTILITY companies in anything less than a military emergency are capable of looking after themselves in any local effort This has been demonstrated time and time again. In all sections of the country utilities are constantly putting into practice their emergency plans. Hurricanes, floods, fires, explosions, tornadoes, windstorms, and other emergencies have geared the industry to emergency action. It is true that nuclear weapons will condition their emergency plans but even more than the actual plans, it is the years of accumulated experience that will prove to be of most value during any time of national emergency."*

sons to succeed to the job in the event that the first designee was unable to act. The Department of the Interior is presently in the process of selecting qualified people. Their names will be announced later.

IN the event of attack, the director's duties would include (but not necessarily be limited to):

(A) Co-ordination of all power activities in the area.

(B) Allocation authority and priority direction over use of power when necessary.

(C) Co-ordination of area power supply plans with civil defense authorities at federal, state, and local levels.

(D) Power of employment of additional personnel during emergency.

(E) Capability to operate in his own area independent of any centralized government.

(F) Shift of director's status to that of a federal employee immediately upon entry into an emergency period.

This, in very short review (with variations meeting area requirements), is the pattern for our proposed national emergency power co-ordination plan—a "shadow" organization that will come to life only when and if necessary.

UTILITY companies in anything less than a military emergency are capable of looking after themselves in any local effort. This has been demonstrated time and time again. In all sections of the country utilities are constantly putting into practice their emergency plans. Hurricanes, floods, fires, explosions, tornadoes, windstorms, and other emergencies have geared the industry to emergency action. It is true that nuclear weapons will condition their emergency plans but, even more than the actual plans, it is the years of accumulated experience that will prove to be of most value during any time of national emergency. Consequently, Interior's efforts are directed toward pushing such preparedness up to a point where it would meet situations of catastrophic proportions; and of course setting up a skeleton organization.

The July 20th to 26th exercises in "Operation Alert—1956" are designed to test these preliminary preparations. Interior will join with the Federal Civil Defense Administration in promoting the success of this exercise. We know that most of the utilities in all of the regions

stand ready to participate to the extent deemed appropriate. We believe that they are already organized to come through this mock attack in a satisfactory manner. In addition, we think there will be developed a keener appreciation for the "might-have-been" aspects of the test. That should prove one of the most valuable and productive angles.

IT is not our desire to superimpose upon the areas another brand of regulatory organization or tier of control authority. The regional director should be more of an over-all co-ordinator, to deal with larger problems that it is not possible to solve on the local utility company level. The plan has raised a number of interesting, important, and difficult questions, only some of which have been answered. Some must await policy determinations by other agencies. Others will be difficult to answer until a situation requiring mobilization or "activation" of this emergency organization arises. Only by periodic tests can we work toward the correct solutions.

One such question is quite fundamental. It relates to the statutory authority for even the existence of such an emergency power group. There is no present law which would permit this "shadow" organization to be activated except upon a finding of the President or Congress that ". . . an attack upon the United States has occurred or is anticipated and that the national safety therefore requires the invocation of the provisions of this title." (Title III—Emergency Authority, Public Law No. 920, 81st Congress.)

In the event of an actual emergency, some new form of the old Defense Electric Power Administration type of agency would be established. DEPA, which existed during the Korean War, was a defense controls agency within the framework of the Interior Department.[1] It operated as a "claimant agency" for electric utilities and established a priority and allocations system by which power distributors and electric-generating utilities were enabled to obtain the materials they required for maintenance and operation.

A revived DEPA's chief function would be to co-ordinate all of the various regions' material and equipment requests to the proper agency responsible for procuring the equipment. It would fit in as a sort of keystone in the power restoration priorities program. It would make the final decision on such priorities in the case of otherwise unavoidable obstacles to fairly prompt power supply restoration.

Beyond this it would be difficult, if not impossible, to predict what a given situation would require in the way of emergency power organization. This much is certain: We in Interior are progressing toward a workable plan which, with sufficiently flexible features, will find us prepared whenever the need arises. It is, of course, the profound wish of all of us that such need will never arise. Should it come, however, and whatever its form, the exemplary co-ordination already evident throughout the electric industry demonstrates that we can and will land squarely on our feet.

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[1] *Editor's note:* Presumably, a revived Petroleum Administration for Defense type of organization would be set up, similarly, for gas and petroleum products industries. (It will be recalled that communications, water, and sewerage industries' materials and controls were handled by Commerce Department subagencies, and transit industry equipment and materials were handled by a similar unit within the framework of the Interstate Commerce Commission.)

The States Discover the Atom: A New Frontier

Electric utility management has a special stake in the shaping of state activities in the atomic energy field with respect to both regulatory and technical developments.

By WILLIAM A. W. KREBS, JR.*

ALTHOUGH less than two years have elapsed since the Atomic Energy Act of 1954 became law, the first pages of a new chapter in state activities have been written. It is a chapter of great portent for the utility industry.

The story begins with the fundamental change wrought by the new law in the legal position of those who have possession of special nuclear materials and ownership of nuclear reactors (and other "production and utilization facilities") in their capacities as private persons rather than as contractors or agents of the national government.

An electric utility company which builds and operates a nuclear power reactor will fall in this class. Prior to the 1954 law a reactor could have been built only if the utility were the contractor or agent of the United States government. In such a capacity its activities in the atomic energy field would have enjoyed broad immunity to state regulation and control. Henceforth, as a mere licensee of the federal government, the utility in carrying on its nuclear power projects is exposed to many of the underlying legal powers of the state and its subdivisions.

THIS position, in the cross fire between federal and state regulation, and in the midst of jurisdictional warfare among

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competing state and local agencies, is not new to utility enterprisers, of course. What *is* new about it, however, is the subject matter with which the regulatory authorities and the utilities must deal and the relationships to be worked out between the federal regulatory authorities, principally in the Atomic Energy Commission, and the state agencies, on the one hand, and among the state agencies themselves, on the other.

First of the state governments to grasp the implications of the change in the federal law were those of Connecticut, Maine, New Hampshire, and Rhode Island which, in 1955, enacted statutes creating permanent bodies within the state governments charged with responsibility for co-ordinating the approach of the various state interests to the new area.

With the exception of the Rhode Island law, these statutes closely follow the model law developed by the New England Committee on Atomic Energy and introduced to readers of PUBLIC UTILITIES FORTNIGHTLY in Sumner Pike's article last June.[1] In addition to establishing a co-ordinating mechanism in the form of a "Co-ordinator of Atomic Development Activities" on the staff of each governor, these statutes declare the policy of the state to be to achieve reasonable uniformity in regulatory development in the concurrent federal-state field, and require each affected state agency to carry out a review of its activities in co-operation with the co-ordinator to ensure adequacy under changed conditions.

A SECOND group of states has initiated studies of their new rôles without the enactment of special legislation, through executive action. Among them are Florida, with a Nuclear Development Commission; Illinois, with an Atomic Power Investigating Commission; Michigan, with an Atomic Energy Study Commission; New York, a Council on the Uses of Nuclear Material; and Texas, an Advisory Committee on Atomic Energy. In addition, the Southern Governors' Conference has recently organized a full-scale study of the South's capabilities and opportunities in the atomic energy field, which will include an analysis of the regulatory function.

The need for state regulatory activity has been most obvious in the field of radiation protection and it is not surprising to find state functions relatively far advanced here. In part this is a legacy of the radium-dial instrument and the X-ray machine. The horrible sufferings of dial painters who intermittently tipped radioactive brushes with their lips made gruesome news in the 1920's.

THE hazards of extended exposure to X-rays, confined as they were to the more sophisticated medical profession, made less impact on the public until the controversy broke over the installation of X-ray machines in shoe stores. State regulation, through industrial hygiene and public health channels, was one response. Quite outside the atomic energy field, therefore, there has developed over the last thirty years a considerable regulatory competence among the states in the radioactivity field. The increasing use of X-ray and other high-energy electrical machines for both research and therapy has spurred this development and would sustain it quite independently of atomic energy.

[1] "Model State Law for Atomic Energy Regulation," by Sumner T. Pike, PUBLIC UTILITIES FORTNIGHTLY, June 9, 1955, p. 668.

The massive quantities of radiation released, and to be released, in the fission process, however, impart an entirely new dimension to the problem and, when coupled with the responsibilities of the states in dealing with the impact of enemy attack with nuclear weapons, clearly mark a new era of state concern with ionizing radiation.

California, Connecticut, Massachusetts, and New York have statutes specifically authorizing radiation control regulations for governing radiation hazards. Delaware, New Jersey, New York, Oregon, Texas, and Wyoming already have comprehensive public health regulations which provide for control of ionizing radiation.

Connecticut, Kansas, New Jersey, and West Virginia have public health regulations which control certain specified types of aspects of ionizing radiation, and similar regulations have been proposed in Kentucky. An approach to regulation of ionizing radiation hazards through the industrial hygiene field has been made in Arkansas, California, Colorado, Connecticut, Florida, Kentucky, New Hampshire, New York, Pennsylvania, Washington, and Wisconsin.

ONE of the most interesting questions posed by the 1954 amendments of the atomic energy law is the extent to which it limits regulation by the states of atomic energy activities of AEC licensees. The question is most pressing, of course, in the radiation hazard field where there has been, and must continue to be, substantial state regulatory activity quite apart from the radiation attributable to reactors and their products. Unfortunately, the problem falls into one of the thorniest thickets of present-day law— as a mere reading of current headlines in the labor and subversive activities' fields will demonstrate.

Pending case-by-case clarification, or further federal legislation, the disposition of both federal and state authorities appears to be to make a working allocation of functions which will leave plenty for the states to do. The moral for utility operators is that they will certainly be in the middle and will be wise to support all reasonable efforts to insure uniformity of standards and regulations and close cooperation between federal and state authorities.

THERE are a number of other state regulatory functions to which the advent of radiation and radioactive products from a privately financed nuclear power industry is likely to be important, although recognition of this fact is not so well developed as in the public health and industrial hygiene areas. The disposal of radioactive wastes represents an extension of the waste disposal problems created by more conventional industries which have led to water pollution regulations in many states. Air pollution control authorities will also be involved. As the sale of radioactive isotopes produced in privately operated reactors occurs, state authorities charged with the regulation of the sale of drugs and of the transportation of dangerous substances will also encounter the new conditions.

The second major area of state regulatory activity to feel the early impact of privately financed nuclear power development is that of public utility regulation itself. The administration of state responsibilities for adequate service at reasonable costs as electric utilities begin to add

nuclear power plants to their systems is carrying state commissions deep into the technological and economic domain that until a year or two ago were the province almost exclusively of AEC.

Applications for certificates of convenience and necessity, for orders regulating the finance of nuclear enterprises, and for rate structures based in part on costs and revenues growing out of atomic power production will all pose new problems to state utility commissions.

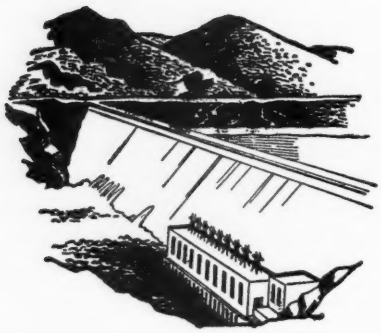
The variety and complexity of these problems are suggested in a recent publication of the University of Michigan Phoenix Project.[2]

MANY other traditional areas of state regulatory function are immediately involved—for example, the regulation of the location and standards of operation of industrial facilities through local zoning; the equity power in the courts to enjoin or minimize a private or public nuisance; the workmen's compensation and tort law with respect to definition of harm and time for claiming recompense. It is this tendency of the new situation to cut across a multitude of state responsibilities that comprises the fundamental logic of the "co-ordinator" approach in the New England statutes.

It would be a mistake, however, to assess the impact on the states of the new national policy in terms of regulatory responsibilities only. At least equally important is the challenge posed to the developmental function. It has become increasingly accepted practice since the end of World War II for states to work aggressively to attract new, or encourage the expansion of existing, industries. To the extent that success in these efforts contributes directly to the economic strength of a public utility system, utilities have a special interest in them. Accordingly, it is of great importance to utilities that the states within their service areas make the most of the opportunities for plant and product expansion offered by the emergence of a new atomic energy industry in private hands.

THE conclusion is obvious that utility management has a special concern with the shaping of state activities in the atomic energy field and a special competence on both the regulatory and developmental sides of the matter. It would be well advised, in the author's opinion, to take a leading rôle. The most immediate hazard is that the magnitude and complexity of the issues will lead either to hasty and ill-considered legislative action on a piecemeal basis, or to inaction that will ultimately father an even more disorderly set of solutions. This hazard can be met by the creation, at the top levels of executive function in each state, of a co-ordinating influence, informed and competent to stimulate and guide a rational development in all areas of state responsibility. Whether this be accomplished through enactment of a law along the lines pioneered by the New England Committee on Atomic Energy or in some other authoritative form is not as important as it is that it be *done.*

[2] *State Regulation of Atomic Energy,* Ann Arbor, 1956.



Coosa River Development—Past and Proposed

The Coosa river of Alabama is the scene of one of the nation's most interesting hydroelectric developments now in the process of expansion, for it is here that the federal government has twice changed its policy as to whether there should be public or private company responsibility.

By THOMAS W. MARTIN
CHAIRMAN OF THE BOARD, ALABAMA POWER COMPANY

ALABAMA POWER COMPANY was organized under the laws of Alabama in 1906 by William Patrick Lay of Gadsden, Alabama. Soon after the company was organized Congressman John D. Burnett, of Gadsden, sponsored and secured passage of an act by Congress, entitled "An act permitting the erection of a dam across Coosa river, Alabama, at the place selected for Lock Numbered Twelve on said river." This act was approved by President Theodore Roosevelt on March 4, 1907, and by its terms the consent of Congress was granted to Alabama Power Company to build the dam and powerhouse. This first development, now known as Lay dam, was completed in 1914.

Captain Lay and his associates sold their stock interests in 1912 to a new group headed by James Mitchell. They owned undeveloped sites on the Coosa river, several of which were upstream and several downstream from Lock Twelve, now Lay dam. From the completion of Lay dam until the passage of the Federal Water Power Act in 1920, which created the Federal Power Commission, there was no federal law under which the development of navigable streams could be undertaken.

MITCHELL dam, the second in the Coosa river group, was completed (in 1923) under the authority of a license granted by the Federal Power Commis-

sion. Jordan dam on the Coosa river was completed in 1928, also under license from the Federal Power Commission.

Provision was made in all of these dams for navigation locks. However, no locks have been built in them by the government.

THE development of the Coosa river had been studied by the U. S. Corps of Engineers for many years prior to and after the formation of Alabama Power Company. The first of many surveys of the Coosa was authorized by Congress in 1870.

The early recommendations by the Corps of Engineers contemplated improvement of the river for navigation only. The advent of hydroelectric power led to the concept of fewer and higher dams, and all studies from 1904 were made first in consideration of navigation and water-power development, and later for flood-control features.

During the period of construction of dams and power facilities on the Coosa river by Alabama Power Company, it also had built three hydro plants on the Tallapoosa river and steam plants at strategic locations elsewhere in the state to firm the power supply.

The Rivers and Harbors Act, approved March 2, 1945 (59 Stat 10), provided for a comprehensive plan for the development of the water resources of the Coosa-Alabama river and tributaries, by the United States.

This act, in effect, withdrew authority from the Federal Power Commission to grant any further license to develop on these rivers. Plans for development were made by the Corps of Engineers, but the Congress did not appropriate funds.

Alabama Power Company's Proposal for Further Development of Coosa River

BY the early 1950's it seemed again feasible for the company to complete the development of the Coosa river envisioned in the early years if Congress would restore the jurisdiction of the Federal Power Commission to license such development. Further studies were made and on November 12, 1953, the company filed with the Federal Power Commission an application for a preliminary permit for a multidam development on the Coosa river.

The proposed development received statewide and enthusiastic support. Alabama's U. S. Senators and eight of her Representatives in Congress indicated their favorable interest. Bills were introduced to restore the jurisdiction over the development of the Coosa river to the Federal Power Commission, one of which became an act of Congress approved by the President June 28, 1954. The bill passed the Senate by unanimous vote and the House of Representatives by a nearly unanimous vote.

Representative Albert Rains of the Fifth Alabama Congressional District told his colleagues that the Coosa river is the "second greatest undeveloped waterway in America," with a "great electric power potential" and a "good navigation potential." He said the bill "does not contemplate the expenditure of one single dollar of federal funds." The Coosa river, he said, "has suffered for eighty years without development." He predicted that the power company's program, if carried out, will result in much economic benefit —or, as he expressed it, mean a "long step forward in the growth and develop-

Dynamic Growth in the Deep South

"IF we are to achieve the economic future which we foresee we must look at least ten years ahead. This we have been doing for the past decade or more; and we now find it important to plan for two decades ahead for the markets we foresee for electric service in our area are almost unlimited. Our plans are influenced by our confidence that 'the last half of the twentieth century belongs to the South'; and while we have been thinking in terms of doubling our electric service in ten years, this now seems destined for a sharp change and it may well be that our service will quadruple in less than two decades."

ment of this great section of our great state."

SENATOR Lister Hill, in the course of consideration of the bills by the Senate, said on June 15, 1954:

> Since 1945, despite repeated efforts to do so, it has not been possible to have funds appropriated for the construction of the dam. Not one dollar has gone into the construction of the dam. The people of Alabama are very much interested in having the development go forward. The Alabama Power Company, which serves the area of Alabama in question, has stated that if it could go before the Federal Power Commission and ask for and receive a license under the terms of the Federal Power Act, it would be glad to build, not one dam, but five dams.
>
> Under the terms of the bill, the Alabama Power Company binds itself to meet the requirements for flood control, such as would have been met had the Howell Mills Shoals dam been constructed by the federal government. The power company binds itself to provide for the basic provisions for navigation, and it also binds itself to build

five dams within ten years from the time the construction on the first dam begins. The Alabama Power Company even goes so far as to bind itself to build first the dam which will mean most for flood control, unless for some good reason the Secretary of the Army, which means the Corps of Engineers, should select some other dam.

THE Federal Power Commission issued its preliminary permit for the proposed project July 27, 1954.[1] Between that date and December 2, 1955, when the company filed its application for a license with the Federal Power Commission, and for a certificate of convenience and necessity with Alabama Public Service Commission, it had expended approximately $2,000,000 for lands, geological, aerial, and surface surveys, and engineering studies. The plan presented meets all legal requirements and at the same time is economically sound.

In its application for license the company asked for authority to construct at an initial cost of over $109,000,000 four new dams and generating facilities, and to make additions to Lay dam and power plant on the Coosa river, all to be coordinated with other generating facilities of the company. These facilities will have an ultimate generating capacity of approximately 421,700 kilowatts and will generate nearly 1.3 billion kilowatt-hours in the average year.

When fully developed for navigation the Coosa-Alabama river system will be one of the principal river highways of the nation, extending from Rome in northwest Georgia to the Gulf of Mexico.

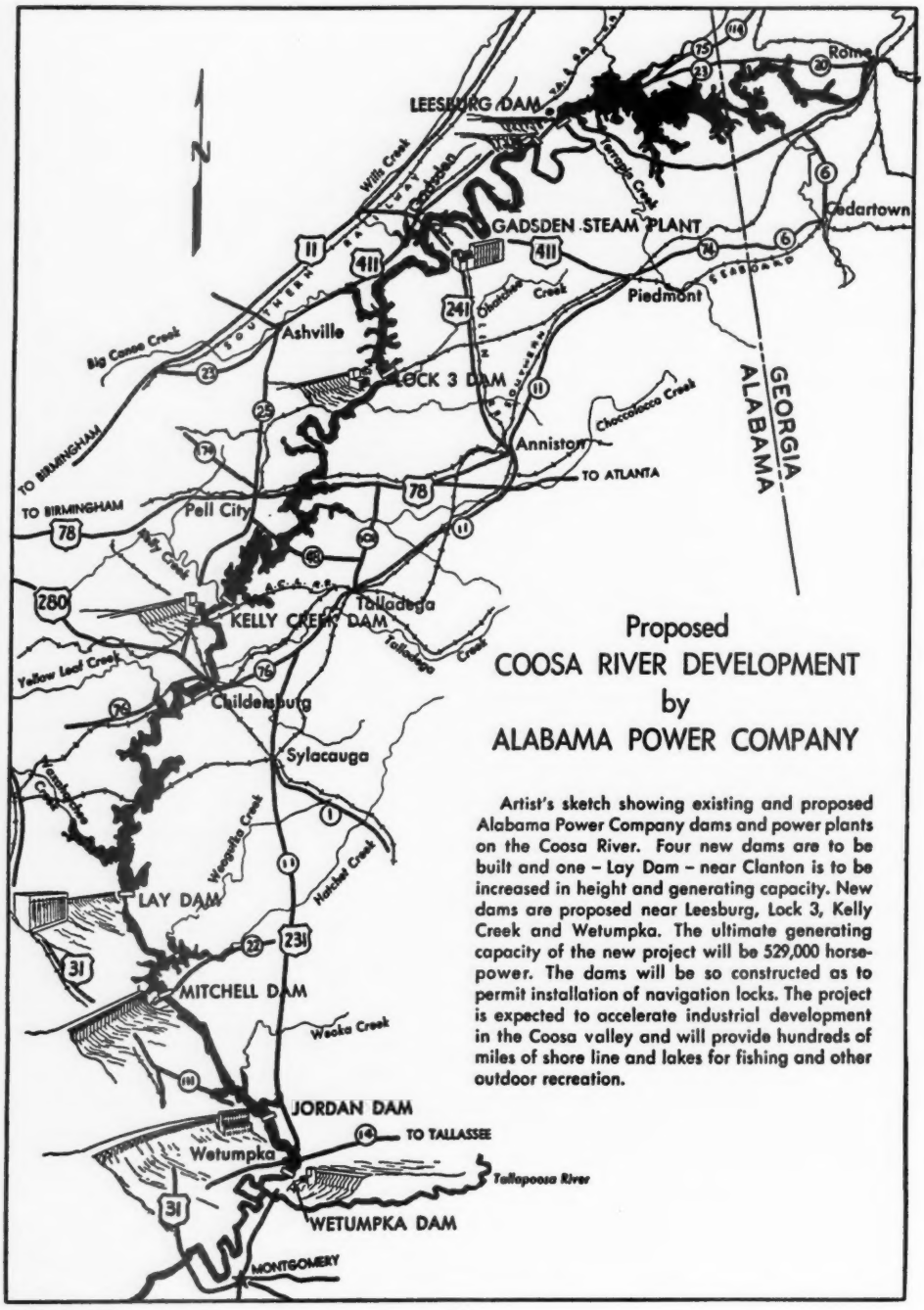
DURING the period between the date of filing for the preliminary permit (November 12, 1953) and December 2, 1955, frequent discussions were held with district representatives of the U. S. Corps of Engineers and regional representatives of the Federal Power Commission so that in the development of the preliminary plans as to the height of the dams and their locations all viewpoints could be considered. Conferences also have been held with U. S. and Georgia and Alabama health authorities, and with representatives of the Fish and Wildlife Service of the U. S. Department of the Interior.

Alabama Public Service Commission, on February 16, 1956, granted a certificate of convenience and necessity for the proposed project. If the license is granted by the Federal Power Commission, the project will proceed as promptly as possible with actual construction of the first dam. Completion of the entire project is expected to take approximately ten years from the beginning of construction.

The passage of the act, the preliminary permit, and all steps leading to the filing of the application with Alabama Public Service Commission for a certificate of convenience and necessity, and with the Federal Power Commission for a license, were accomplished without major controversy.

The completion of the plans of the company will result in eight dams between Rome and Wetumpka—the existing government Mayo's Bar dam near Rome, four new dams of the power company, and the three existing power company dams—coinciding with the recommenda-

[1] By coincidence, Alabama Power Company on this date filed with the Federal Power Commission an application for a preliminary permit for certain hydroelectric developments on the Warrior river. They are not, however, related to the proposed Coosa river development.


LEESBURG DAM
Rome
Cedartown
GADSDEN STEAM PLANT
Piedmont
Ashville
LOCK 3 DAM
Anniston
TO ATLANTA
GEORGIA
ALABAMA
TO BIRMINGHAM
Pell City
Talladega
KELLY CREEK DAM
Childersburg
Sylacauga
LAY DAM
MITCHELL DAM
JORDAN DAM
TO TALLASSEE
Wetumpka
Tallapoosa River
WETUMPKA DAM
MONTGOMERY
Proposed
COOSA RIVER DEVELOPMENT
by
ALABAMA POWER COMPANY
Artist's sketch showing existing and proposed Alabama Power Company dams and power plants on the Coosa River. Four new dams are to be built and one – Lay Dam – near Clanton is to be increased in height and generating capacity. New dams are proposed near Leesburg, Lock 3, Kelly Creek and Wetumpka. The ultimate generating capacity of the new project will be 529,000 horsepower. The dams will be so constructed as to permit installation of navigation locks. The project is expected to accelerate industrial development in the Coosa valley and will provide hundreds of miles of shore line and lakes for fishing and other outdoor recreation.

tion of the Corps of Engineers as to number of dams in its study of 1953. (See map, page 822.)

All of the requirements of the act of Congress for navigation, power, and flood control are met in the plan filed with the Federal Power Commission. The company filed its application for a license nearly seven months ahead of the time required by the act.

The lakes to be created by the new dams on the Coosa will provide hundreds of miles of shore line and lakes for fishing and other outdoor recreation, as well as home sites for those who desire a lake front. No less important will be the stabilization of river levels for municipalities along the river and by creating lakes with known water levels the area will be more inviting to industries needing substantial supplies of water in their operations.

The three existing dams of the company on the Coosa river, together with the new dams, will provide a waterway of approximately 255 river miles of sufficient depth to permit navigation from Rome to the Wetumpka-Montgomery area when locks are provided by the government.

The Coosa-Alabama river system is one of the great undeveloped waterways in America. As previously indicated, countless efforts have been made for over a century to develop the potentialities of the Coosa-Alabama rivers. The program of the company will hasten the dam when the potentialities of these streams will be more fully developed.

THE Coosa river story is not complete, I believe, without brief reference to the various plants of the system existing and under construction in addition to the new Coosa river plants.

The company owns and operates six hydroelectric generating stations with installed capacity of 489,700 kilowatts, which, with the new Coosa plants, will be increased to 911,400.

In addition, the company has six steam-electric generating stations with installed capacity of 1,046,250 kilowatts, and has under construction additional steam-generating units of 390,000 kilowatts capacity, which, when completed, will make a total of 1,436,250 kilowatts of steam capacity.

THE hydro capacity of 911,400 kilowatts and the steam capacity of 1,436,250 will make a total of 2,347,650 kilowatts of capacity of the system upon completion of the additional construction.

Even this capacity, however, will not be sufficient to meet our requirements as we foresee the future. If we are to achieve the economic future which we foresee we must look at least ten years ahead. This we have been doing for the past decade or more; and we now find it important to plan for two decades ahead for the markets we foresee for electric service in our area are almost unlimited.

Our plans are influenced by our confidence that "the last half of the twentieth century belongs to the South"; and while we have been thinking in terms of doubling our electric service in ten years, this now seems destined for a sharp change and it may well be that our service will quadruple in less than two decades.

The Sale of Off-peak Power

Are electric utilities missing opportunities for profitable sale of a class of service which they already have available without the need for any substantial additional cost?

By ORRIN S. VOGEL*

THE term "off-peak" power as it is used in this article means electrical energy sold under a contract that limits the customer hours of full-load service so that his operation and associated electrical requirements will have no effect on the company's generating equipment during the hours of system peak load. This type of service must be controlled so that it can be supplied from existing generating facilities. If it is properly sold it will not require the installation of any additional production plant[1] capacity regardless of the size of the off-peak load.

There are many classes of electric service—residential, commercial, water heating, irrigation, etc.; but there are only three general types—firm, interruptible, and off-peak.

FIRM service is continuous. It is service available at any time and all the time, twenty-four hours a day. To provide this type of service, the company must install spare or stand-by generating equipment. This is essential so that continuity of service can be maintained in the event of failure of a major generating unit.

Interruptible service is different in that it is not reinforced or supported by spare capacity. When a major unit fails during any peak load period the interruptible customer must reduce his requirements until the damage is repaired or until the load on the system has decreased to a point where his service can be restored without overloading the generating plants.

The firm customer, because of his service priority on all equipment, must pay a pro rata share of all costs of service. The interruptible customer, because of his lack

*Director of economic research, Florida Power Corporation. For additional personal note, see "Pages with the Editors."

[1] Production plant means the accounting classification of investment. There are five accounting divisions of electric plant investments—intangible, production, transmission, distribution, and general plant.

Some of the technical terms used in this paper have more than one interpretation. For that reason, a few analogies and definitions in everyday language have been added for clarification.

of priority, does not pay a pro rata of the costs related to investments in spare capacity.

OFF-PEAK service is service to the customer except during the hours of system peak load. During those hours the firm and interruptible customers have priority on all generating capacity. For that reason the off-peak customer must be able to adapt his operation to unscheduled interruptions. Although he never knows when system peaks will occur, the information that he does need regarding the probable duration and number of interruptions per year can be provided in advance so that dependable contracts can be drawn to guarantee the required off-peak service.

A very good example of the type of electric load that can be adapted to off-peak service is the electric furnace. Furnace loads are usually large, often taking as much as 15,000 to 25,000 kilowatts per unit. This type of load can be interrupted on very short notice by withdrawing the electrodes from the furnace. The orders are usually given by the load dispatcher over carrier current or over the telephone system to the local substation operator. Fortunately, the electric furnace can stand interruptions for short periods without interfering with the production process.

There is an increasing number of industrial operations that can take advantage of off-peak electric service and obtain the benefit of substantial savings in power cost.

This is a type of service worthy of thoughtful consideration not only by the customer and the company but by the regulatory authorities. Their endless problem in the postwar period has been one of constant demand for upward adjustments in electric and all other types of utility rates. These adjustments have been imperative to balance the effect of greatly increased investment and operating costs, caused by the rapid and continuing inflation since World War II. For example, it has been generally observed during the past few years that the increase in annual fixed charges, interest, tax, and depreciation costs, associated with the higher over-all plant investment costs per kilowatt has been faster than the savings brought about by the continuing improvement in generating efficiency.

IF the off-peak loads can be fully developed, they will substantially increase the earning power of existing plant investments which in turn will aid appreciably in holding the line on present rate levels. This increased earning power, so greatly needed today, will also provide a measure of relief to the presently overburdened regulatory authorities.

In the average electric company system, the production equipment is being used about 50 per cent of the time, so that the company is selling annually about 4,500 kilowatt-hours out of a possible 8,760 kilowatt-hours for each kilowatt of capacity. (That is the maximum number of kilowatt-hours one kilowatt of generating capacity can produce annually.) For that reason there is an ample supply of off-peak power available in many of the large electric systems. If it can be sold, it will increase the use of the company's facilities and thus benefit the community, the customer, and the investor.

Perhaps we can get a better picture of the off-peak problem by substituting a quantity of water in gallons for electricity in kilowatt-hours.

Instead of using 500,000 kilowatt-hours as the maximum electrical requirement of the customers per hour, we will assume that 500,000 gallons of water per hour is their maximum need.

In the analogy each plant can produce 500,000 units of service per hour. The water unit is the gallon and the electric unit the kilowatt-hour. At that rate per hour the annual output in units of service is a very large quantity for there are 8,760 hours in one year. Multiplying 500,000 by 8,760 we get the answer 4,380,000,000 units of service.

WE will also assume that the prospective off-peak irrigation customer needs 30,000 gallons of water per hour and that he has agreed to have his service cut off whenever the supply is inadequate or the demand of other customers exceeds 500,000 gallons per hour.

To be certain that the customer's 30,000-gallon-per-hour requirement does not overload the pumping plant, we must put an automatic cutoff valve on his service so that the supply will be curtailed whenever the load on the pumping plant reaches 500,000 gallons per hour. The solution of the pumping plant capacity problem, as we observe, is simple because the time of full load (500,000 gallons per hour) can be determined at the pumping station by reading the demand, or flow, meter; and what is equally important the control equipment can be located in the pumping station.

The supply and control problems associated with water are comparable with those relating to the provision of electric service.

The constantly increasing weight of annual fixed charges in the cost of electric service makes it imperative that the electric utilities find a way of selling more of the unused, or off-peak, capacity in their generating plants.

Before a company can sell off-peak power it must find out how much off-peak energy it has, what load controls are required to make this power available, and at what price it can be profitably sold to the customer.

The purpose of this article is to determine what load limitations are required to make this idle power available, what variations in the curtailment of off-peak service the customer can tolerate, and the effect of such sales on the company's operating costs. The solution of the sales prob-

¶ *"THERE is an increasing number of industrial operations that can take advantage of off-peak electric service and obtain the benefit of substantial savings in power cost. This is a type of service worthy of thoughtful consideration not only by the customer and the company but by the regulatory authorities. Their endless problem in the postwar period has been one of constant demand for upward adjustments in electric and all other types of utility rates. These adjustments have been imperative to balance the effect of greatly increased investment and operating costs, caused by the rapid and continuing inflation since World War II."*

lem will depend largely on the accurate determination of the load and use characteristics of present customers. The price at which this energy can be sold will depend upon the ability of the prospective off-peak customer to accommodate his requirements to the utility's present system load characteristics and operating conditions.

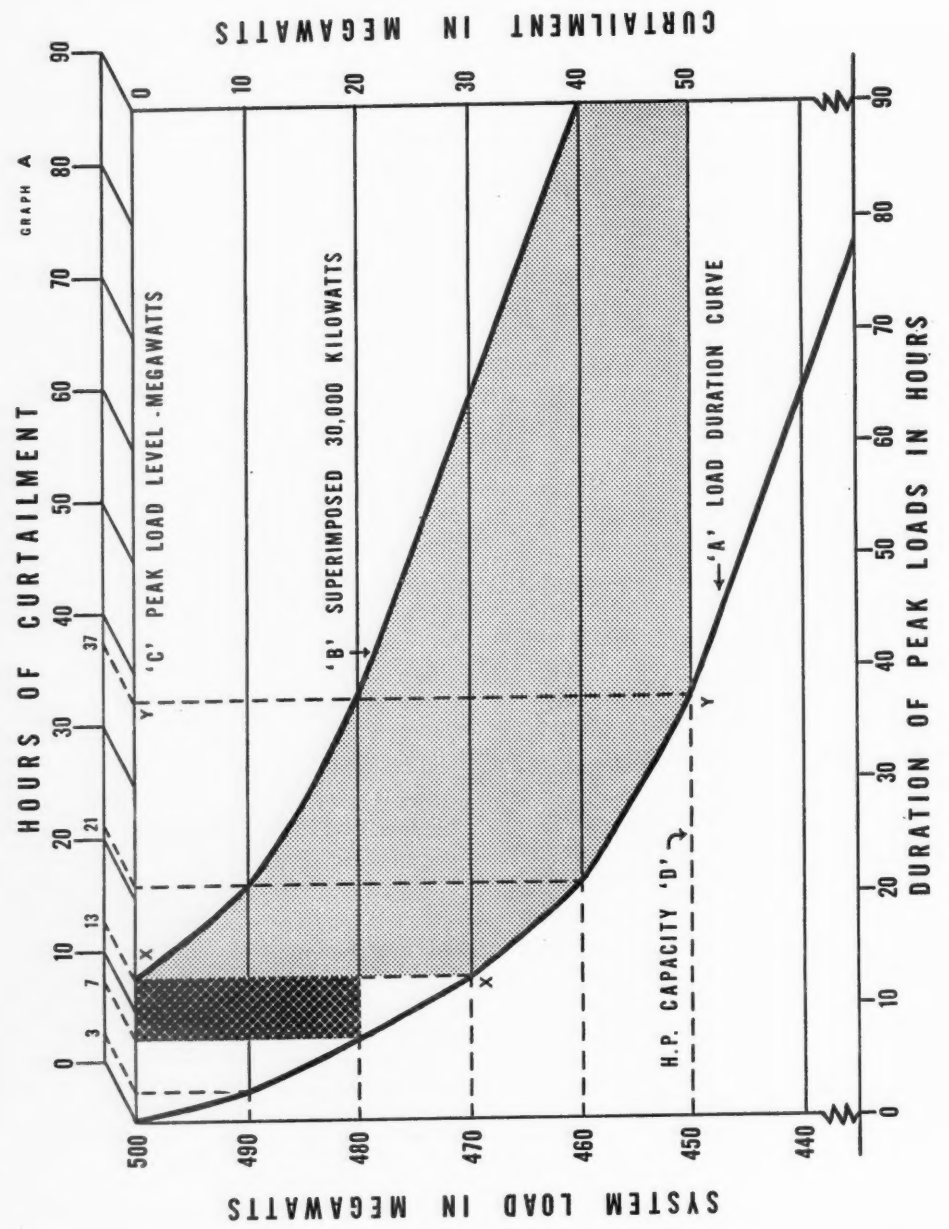
IN this study we are concerned with the sale of kilowatt-hours that can be generated by existing plant facilities in excess of those required by present customers. Our experience and study of the problem prove that under normal system load conditions off-peak service will require only minor restrictions or load limitations on the customer's operation.

There are many variable economic factors associated with this problem, but, fortunately, there are a few reliable guideposts along the way. Electric utility load-building programs in recent years have not produced any appreciable improvement in system load factor. Load factor is the ratio of the kilowatt-hour sold to the total that could have been sold if the existing plant capacity had been fully used. Two factors are largely responsible for this result. The first has been the high rate of electric system load growth. The second is the continuing similarity of electric customer use habits. It is to be hoped that this situation will develop to some extent like that of a growing youngster. When his vertical growth slows down, the youngster generally fills out. Likewise, when the rate of electric system growth slows down, it is to be hoped that the load factor will begin to fill out.

Recalling the old adage about the ill wind that does not blow some good, the present rather poor system load factor condition in itself presents several favorable factors for future development. One lies in the very existence of wide-open margin available for improvement. The other favorable factor is that the rapid expansion of electric systems in recent years has forced the installation of many new efficient high-pressure steam-generating units. These new units have made large quantities of energy (kilowatt-hours) available that can be produced at correspondingly lower cost; and this is quite an advantage in relation to this problem. It means that a very substantial part of the available off-peak energy can be generated at a reasonably low energy cost per kilowatt-hour by using these modern, highly efficient generating units more hours per year.

STILL another favorable angle is that during this period of rapid expansion and development of more flexible system operations, the field for the application of off-peak electric service has been very substantially broadened by the development of new inventions and new electrolytic processes which can take good advantage of just such service.

Because of the similarity in electric system load characteristics, particularly as to the load factor, the quantity of off-peak power a company has to sell is almost directly proportional to the size of the electric system. However, that does not provide the information the company and the customer need to know, which is, the duration of interruptions and the annual amount of off-peak power available. This is where the load duration curve becomes a very useful tool in providing answers to those questions.


GRAPH A
HOURS OF CURTAILMENT
CURTAILMENT IN MEGAWATTS
SYSTEM LOAD IN MEGAWATTS
DURATION OF PEAK LOADS IN HOURS
'C' PEAK LOAD LEVEL - MEGAWATTS
'B' SUPERIMPOSED 30,000 KILOWATTS
'A' LOAD DURATION CURVE
H.P. CAPACITY 'D'
X
Y
0
3
7
10
13
20
21
30
37
40
50
60
70
80
90
0
10
20
30
40
50
500
490
480
470
460
450
440

One of the normal questions in regard to this problem from a generating company's point of view is, "What happens when a new generating unit is added to the existing system?" To get an answer to that question the writer made a study of the actual duration of system peak loads over a period of several years. The results of the study disclose that, in recent years, there has been very little change in the shape of the front end of the load duration curve — the only part of the curve, as we shall see later, that is vital to this study. The importance of this characteristic will become apparent.

WHEN additional generating units are added to an electric power system, new high-pressure capability and capacity levels are established. This increase in high-pressure capability and capacity does not change the shape of the load curve. Graphical studies of past operations show that the load duration curve has been continually moving upward almost as though it were a solid line. Its shape depends upon the combined characteristics of existing consumer loads and not at all on the changes that have been made in plant capacity.

Off-peak service, as we have defined it, means more power (kilowatt-hour) from existing plants. The solution of the off-peak problem, therefore, depends largely on fitting the characteristics of the off-peak customer's load requirements to those of existing customers by use of the load duration curve.

Graph "A," set out on page 828, using a typical 1954 load duration curve with assumed demands, illustrates the use of the curve and shows how this fitting job can be done.

The purpose of this graph is to determine the total hours of curtailment and development data with which to test the effect of a large off-peak load on present system peak load conditions. The principal curve on the graph is the load duration curve marked "A." This curve is constructed by assembling and plotting to scale all of the system hourly peak loads above a selected level (440,000 on chart) that were registered during the year in the order of their magnitude. When the hourly loads are being compiled a record should be made of the consecutive peak hours above the selected level to determine the number of curtailment periods exceeding one hour.

CURVE "A" has been drawn to show the duration of all system peaks between 440,000 and 500,000 kilowatts. Curve "B" represents a prospective high load factor off-peak customer's load of 30,000 kilowatts. This load has been superimposed on the system load duration curve. Curve "B" is, as the chart shows, 30,000 kilowatts above the system load duration Curve "A" all the way. There is an optical illusion at the front end of this Curve "B" that makes it appear to, but it does not, converge with the system load duration Curve "A."

To make the use of the graph easier, there have been added scales on the upper and right-hand margins. This moves the working part of the graph up out of the way. Horizontal lines "C" and "D" have been added to locate the level of the system peak load (500,000 kilowatts) and of the system high-pressure capability (450,000 kilowatts). The main distinction between high-pressure and low-pressure capacity, in so far as this study is concerned,

is the difference in production cost per kilowatt-hour.

Now let us see what information we can obtain from Graph "A." Suppose we select a system load of 450,000 kilowatts. A horizontal line drawn at that level intersects the load duration Curve "A" at Point "Y." Projecting that point up to the curtailment scale, we observe that the reading is thirty-seven hours. This means that for thirty-seven hours, scattered throughout the year, system peak loads exceeded 450,000 kilowatts. It also means that an off-peak load of 50,000 kilowatts could have been carried in every hour of the 8,760 hours in the year, except during those thirty-seven hours.

THE tabulation below, taken from Graph "A," shows the annual hours of curtailment for assumed off-peak loads between 10-50,000 kilowatts.

We observe that Curve "B" of the superimposed off-peak load intersects the peak load Line "C" at Point "X." By projecting this point over to intersect the curtailment scale at the top of the chart we can read the number of hours the new load would have to be reduced or cut off, which is thirteen hours (this we observed in the above tabulation), to avoid establishing a new system peak. In this study any load exceeding 500,000 kilowatts would require building additional plant capacity. "Y" is the point above which, under normal system conditions, low-pressure generating units must be used to supply all of the energy required by the 30,000-kilowatt load.

It may seem incredible that loads in excess of 90 per cent of the system peak (that is between 450,000 and 500,000 kilowatts as shown on Graph "A") occurred during less than fifty hours per year out of a possible total of 8,760. Graph "A" actually shows thirty-seven hours.

A prospective customer may be able to operate his business economically for a period of time at part load. If that is true and the information is available, the graph can be used to determine how much longer the customer's load can be carried by the company's generating plants at the curtailed level without forcing a new system peak.

We observe that the load duration curve provides a considerable amount of useful information for testing the effect of the prospective off-peak load on company peaks. This part of the study is also essential to the company for the purpose of controlling plant investments and in turn fixed charges. The load must be controlled so that the company will not incur additional generating plant fixed charges.

Energy Costs

THE next important factor associated with this type of problem is the energy cost. It is essential to determine the effect of the prospective customer's kilowatt-hour requirements on system production or energy costs. Here again the load duration curve provides a source of

Peak Load	*Firm Load*	*Total Load*	*Hours of Curtailment Per Year*
10,000 KW	490,000 KW	500,000 KW	3 Hours
20,000 KW	480,000 KW	500,000 KW	7 Hours
30,000 KW	470,000 KW	500,000 KW	13 Hours
40,000 KW	460,000 KW	500,000 KW	21 Hours
50,000 KW	450,000 KW	500,000 KW	37 Hours

factual information necessary for the solution of this rate-making or costing problem.

Graph "A" also illustrates how the load duration curve can be used to determine energy costs.

It will be observed that beyond the point where Curve "B," if extended, would intersect the high-pressure Line "D," Line "B" diverges from "D"; therefore, increasing quantities of kilowatt-hours must be produced by using high production cost low-pressure generating units. The amount of high-cost energy continues to increase each hour up to Point "Y." If service is provided beyond that point, we observe that the entire off-peak load is being generated above the high-pressure level Line "D"; therefore, it must be carried by high production cost low-pressure generating equipment.

Since these curves have been plotted to scale on the foregoing Graph "A" that reads hours on the horizontal and kilowatts on the vertical scale, the area between the load duration Curve "B" and the high-pressure Line "D," up to the point of curtailment, is actually a measure of the number of kilowatt-hours that must be generated by low-pressure equipment to supply the off-peak load. Graph "A" also graphically illustrates the relationship between kilowatts and kilowatt-hours. For example, when the chart is drawn on cross-section paper each small square represents a definite number of kilowatt-hours. By counting the number of squares in the shaded area we can obtain the number of kilowatt-hours generated by low-pressure units.

If the prospective customer's load can be partially curtailed from time to time, it is evident that additional kilowatt-hours can be supplied without causing a peak; but these kilowatt-hours will also have to be generated using low-pressure equipment.

If, for example, the 30,000-kilowatt load was reduced to 20,000 kilowatts it could be carried for an additional period, as shown by the cross-hatched area.

The production cost per kilowatt-hour using low-pressure equipment may be more than twice that of high-pressure equipment. For that reason the amount of low-pressure generation must be given special consideration in the development of an energy rate for this type of service.

We observe that the load duration curve is also a useful tool in determining the effect of low-pressure generation on the production cost of off-peak energy.

Up to this point we have been studying the effect of anticipated off-peak loads on generating plant fixed charges and production costs. The next part of the study relates to the effect of off-peak loads on transmission plant, investment and operating, costs.

Transmission System Costs

In this study, we have presumed that electric service to the off-peak customer will be supplied from a transmission network connecting several generating plants, and not from one local plant. Under normal conditions generating plant locations are not predicated on the same factors that determine the location of a customer's operation.

We have assumed, as is usually the case, that the new off-peak load will have a high annual use or high load factor. On that basis, the load must be served practically all the time regardless of prior commit-

Advantages of Off-peak Sales

"IT is evident . . . that off-peak sales are worth fighting for. They mean increased revenues and income from existing plant investments. They will permit more efficient plant operation and improve the over-all economy of the area and the utility system. It has been shown that the rate can be made attractive to the off-peak customer and with very little adjustment in his operation. The larger electric utilities need more of this type of business. It could be vigorously promoted and more fully developed to obtain the maximum return per dollar of investment."

ments or the normal requirements of the existing firm load customers on the company's transmission system. Firm customers are those that pay the full cost of uninterrupted service and therefore have first call on system capacity.

FROM a practical standpoint any segment of an existing transmission system may be required to carry a full load at any time to take care of existing firm customers. It would be uneconomic to provide 30,000 kilowatts of spare transmission plant capacity at all points on the transmission network to take care of the 30,000 kilowatts off-peak load we have assumed in this study. The transmission plant capacity requirements of this type of customer will be almost the same as those of any firm customer.

There undoubtedly will be situations where off-peak requirements will not be the same. But for the purpose of this discussion, which is confined to basic data for use in the solution of off-peak load and rate problems, as they relate to transmission network systems, it has been assumed that the over-all effect will be approximately the same as that of any like firm customer.

FIXED charges on transmission system investments should be paid for by all customers. After giving effect to class diversity, all loads require the construction of the line and substation capacity. Diversity is the ratio of the sum of the maximum loads, of the individual customers, in a class in kilowatts to the maximum coincident load they actually impose on the utility system. The transmission line fixed charges generally total between 13 per cent and 15 per cent of the investment. The over-all percentage will vary depending upon the required or assumed rate of return and the associated income tax. In the above estimate we have assumed a return of 6 per cent. Actual fixed charges other than those related to the return can be accurately obtained from the company's operating reports.

One of the more realistic methods of apportioning transmission level costs is to use the noncoincident peak demand, the sum of the loads in kilowatts during the peak month. Then the transmission investment per kilowatt of noncoincident load, times the calculated fixed charge rate is the annual fixed charge. It may be desirable to include in the transmission system demand charge the transmission operating and maintenance costs per kilowatt.

IF the transmission cost is to be set out in the rate structure on a kilowatt-hour in preference to a kilowatt basis, that can be done by dividing the annual demand cost per kilowatt by 8,760 hours, times the customer's load factor. The divisor for an 80 per cent load factor customer, for example, would be 8,760 x 80 per cent, which is 7,008 hours per year.

It is reasonable to assume that any off-peak customer will require a small block of firm power for the operation of auxiliaries. This type of customer may also be able to adjust his operating requirements so that a portion of the load can be supplied on an interruptible basis and the balance of his requirements on an off-peak basis.

If the customer's operation requires a block of firm power, he must pay for it at a rate equal to the full cost to serve at the transmission level, plus any other costs incident to providing the desired service.

If the customer can use a block of interruptible power, an adjustment in the rate can be made for that type of service proportional to the value of the application of interruptible terms of the contract to the company.

Since the off-peak customer is not directly responsible for generating plant construction, he is entitled to a lower rate.

To illustrate the variations in the costing problem, we will assume that a prospective customer needs:

(1) 5,000 kilowatts of firm power
(2) 10,000 kilowatts of interruptible power
(3) 25,000 kilowatts of off-peak power

THE cost elements involved in providing the different types of service using a three-part, Demand "D," Energy "E," and Fuel Adjustment "A" type rate, are as follows:

(1) *5,000-kilowatt Firm:*

"D"—Cost to serve at the transmission level including production and transmission fixed charges and all transmission operating and maintenance costs per kilowatt.

"E"—Average production cost per kilowatt-hour.

"A"—Fuel adjustment per kilowatt-hour.*

Firm Service:

Now what is the demand cost incurred by this type of service? The "firm customer's" load must be supported by stand-by plant. Therefore, he must pay a pro rata of the fixed charges on all investments required to provide this type of priority service.

His energy cost is the average cost of producing and delivering a kilowatt-hour to his meter. The energy charge per kilowatt-hour would be adjusted each month by the operation of the fuel escalator clause, so that the energy cost per kilowatt-hour moves up on an increase and down on a decrease in the actual cost of fuel to the utility.

(2) *10,000 Kilowatts Interruptible:*

"D"—Cost to serve at the transmission level including production and transmission fixed charges and all transmission operating and maintenance costs per kilowatt, less an adjustment per kilowatt-hour.**

"E"—Average production cost per kilowatt-hour.

"A"—Fuel adjustment per kilowatt-hour.*

Interruptible Service:

Has there been any change in the demand cost incurred in providing service to the "interruptible customer"? Yes, this customer has a service restriction. He cannot have service when a major unit is down for repair, or until full service has been provided to all firm customers. Therefore, he does not pay full fixed charges. He receives an adjustment in rate because he has relinquished his priority on spare or stand-by facilities.

The "interruptible customer's" energy costs are the same as those of firm customers.

(3) *25,000 Kilowatts Off-peak:*

"D"—Cost to serve at the transmission level, after adjusting production plant fixed charges, but including transmission system operation and maintenance costs.

"E"—Production costs of off-peak power at customer's load factor per kilowatt-hour (including customer costs and profit per kilowatt-hour).

"A"—Fuel adjustment per kilowatt-hour.*

Off-peak Service:

Now what about our special problem, the "off-peak customer"? What are his demand or fixed charge obligations?

The "off-peak customer" has no priority on plant capacity; therefore, he is entitled to an adjustment on the normal production plant fixed charges. However, he must pay full fixed charges on other classes of plant investments.

What about his energy cost? The energy cost to this type of customer may be somewhat higher than the system average cost per kilowatt-hour. This differential can be determined by a study of the relationship of the low-pressure to high-pressure generation established to provide the service. This will also determine whether any change is necessary in the fuel adjustment provision.

GENERAL property and certain other investment items have not been dis-

*The fuel adjustment to be applied above a fixed base at a rate equal to the fuel cost per kilowatt-hour delivered per one-cent change in the price of fuel.

**This adjustment will be in proportion to the value of the terms of the interruptible contract to the utility company.

cussed in this article because they were not essential to its purpose. The fixed charges associated with those investments would have to be given consideration in the actual development of a rate to an off-peak customer.

In addition to the above costs, a "Commodity Adjustment" factor would also have to be added in all large, long-term contracts to compensate for the continuing effect of inflation on utility operating costs.

It is evident from these studies that off-peak sales are worth fighting for. They mean increased revenues and income from existing plant investments. They will permit more efficient plant operation and improve the over-all economy of the area and the utility system.

It has been shown that the rate can be made attractive to the off-peak customer and with very little adjustment in his operation. The larger electric utilities need more of this type of business. It could be vigorously promoted and more fully developed to obtain the maximum return per dollar of investment.

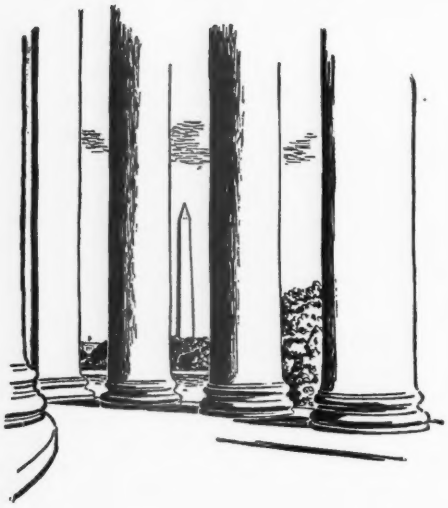
Shifting Burdens to the Government

"To hold . . . that depressions can be eliminated is to imply that any slack in private spending will be taken up by increased federal expenditures. While this can be done, shifting the burden of maintaining peak levels of business activity to the government merely postpones the day of reckoning. The federal debt is now around $274 billion, or $6,650 per family, as compared with $605 per family in 1929. In other words, the average burden of federal debt per family has increased elevenfold in a quarter of a century. To aggravate matters, 62 per cent of the interest-bearing marketable debt is due or callable within five years. The present administration has striven to lengthen out debt maturities and to distribute the debt more widely in the hands of long-term investors. But since coming into office, it has been able to extend the average maturity by only ten months to an average of four years and eight months. Because of the preponderance of short-term debt, the Treasury is compelled to resort to frequent financing. An excessive floating debt reduces the flexibility of fiscal operations and forces the Treasury to sell its short-term issues to banks, which leads to an expansion of deposits with its inflationary developments.

"Attempts have been made to impose a statutory limit on the federal debt, but these ceilings are elastic and have been lifted under the pressure of federal expenditures and the growing demand for financial aid by state and local governments.

"Since this country has apparently reached the ceiling on taxation, there is grave danger that resort to continued deficit financing in order to keep the economy at boom levels may eventually bring about a further shrinkage in the purchasing power of the dollar, which has already shrunk nearly 50 per cent in the past decade and a half."

—EXCERPT *from "New England Letter," published by The First National Bank of Boston.*



Washington and the Utilities

Senate Passes Niagara Bill

THE Senate overrode strong Republican opposition in approving a bill to authorize New York state to build a $400,000,000 public power project at Niagara Falls. The 47-to-39 roll call vote climaxed several days of debate. Some Republicans charged that the project "would undermine the private enterprise system" and "pave the way for limitless expansion of public power."

Because a close vote had been expected, Democrats delayed the showdown for one and a half hours while Senators Estes Kefauver (Democrat, Tennessee) and Wayne Morse (Democrat, Oregon) flew to the capital from Oregon to cast their ballots for the bill.

Voting for the bill were thirty-nine Democrats and eight Republicans. Opposed were six Democrats and thirty-three Republicans.

The measure, sponsored by Senator Herbert H. Lehman (Democrat, New York), would direct the Federal Power Commission to license the New York State Power Authority to construct the Niagara Falls power plant. The bill was sent to the House.

The Senate vote climaxed a 6-year dispute over whether New York or private utilities should build the project. Just before final passage, the Senate voted 48 to 38 to reject a move by Senator Prescott Bush (Republican, Connecticut) to send the bill back to the Public Works Committee for more study.

The Senate approved an amendment by Senator Norris Cotton (Republican, New Hampshire) under which New York would put up the $6,400,000 the federal government now spends each year in maintaining the scenic beauty of the falls.

The measure would carry out this country's obligations for joint development with Canada of the river's resources. Such a treaty was signed by the two countries in 1950.

THE Lehman Bill (S 1823) was sent to the House where the Public Works Committee has already considered Niagara bills of various types in hearings last year. So far, no choice has been made among them. The Buckley Bill (HR 8109)—House version of S 1823—was introduced this year by the Public Works Committee chairman, Representative

Buckley (Democrat, New York), who had agreed finally to go along with Senator Lehman in seeking state development by the New York State Power Authority with a full federal-type preference clause provision. The eventual outlook is for an impasse preventing any legislation at this session.

The two New York Senators took opposing stands on plans for the project's development and on the preference provision in the bill passed by the Senate. Senator Ives (Republican) told sponsor Lehman (Democrat) and other members, during Senate debate, that the measure would require the state to "pursue a course it cannot pursue under existing laws and policies," and one it "does not desire to pursue." So long as the state has no such preference arrangement in its existing power laws, there is "grave doubt" that the state authority can build it.

The decisive test on the private *versus* government power issue at Niagara may come next year—after the election. What form of new approach will be taken, to the problem of utilizing Niagara's untapped water resources without further delay, will depend mainly on campaign results, both in New York and elsewhere. Senator Lehman is running for re-election to his present seat on the basis of government power development. Meanwhile, both political parties are airing opposing plans for Niagara development, primarily for campaign propaganda. Thus, the conflicting proposals for Niagara development are almost certain to be shelved by Congress for the sixth straight year since it first reserved the right (by treaty with Canada) to determine development.

Argument on TVA Funds

THE Senate and House finally accepted their conferees' report that, in effect, enables the Tennessee Valley Authority to build additions to existing power plants without getting approval from Congress. They did so by approving a House-Senate conference report on an $852,400,000 supplemental money bill which makes no mention of TVA. The President had asked Congress to appropriate $3,500,000 to start construction of a new generating unit at the John Sevier steam plant in Tennessee.

The House cut out the item when it originally approved the bill. The committee had commented when it reported the bill that TVA could build the unit directly from its power revenues without getting a congressional appropriation. The Senate voted the fund but conferees cut it out after a month-long deadlock. Both House and Senate by voice votes recently upheld the conferees' position.

Opponents, led by Representative John Taber (Republican, New York), contended that the House position amounted to "abdication" by Congress of its control over TVA. He called such direct spending by TVA "illegal" and said he would ask the Comptroller General to prevent it. If that does not work, Taber said he would legislate to prevent it. TVA area Congressmen said whether TVA had such spending authority was a legal question which would not be affected by approval or defeat of the money bill.

PASSAGE by Congress and probable approval by the President does not mean, however, that TVA *must* use its revenues for steam expansion purposes. The agency could refuse to use its funds in this manner at a later date. Thus, if there is an eventual change in the TVA directorate, administrative policy on this matter might likewise change. There is no question that, as presently organized, TVA will go along with the congressional mandate.

TVA General Manager A. J. Wagner said, before the vote, that the agency had already begun preliminary work with its own funds because there was "no question" of congressional approval of the project, only as to how it should be financed.

The language allowing TVA to use its operating revenues was originally contained in the report of the House Appropriations Committee, headed by Representative Cannon (Democrat, Missouri). The appropriation bill itself contains no such wording, but by implication sanctions the prior use of TVA funds for steam expansion without a congressional go-ahead.

Atom Insurance

THE Joint Congressional Committee on Atomic Energy listened to various proposals on the question of what kind of insurance support must be provided for atomic energy power plants. AEC requested Congress pass some sort of legislation for insurance and indemnification of the proposed atomic power plants. The AEC proposal assumes that private insurance companies will undertake a portion of the risk and that over and above the amount insurable by them, the government will underwrite such risks. Joint Committee Chairman Anderson (Democrat, New Mexico) took issue with the AEC proposal on the basis of method, but not aim. Anderson maintained that the AEC proposed insurance plan would protect the stockholders of the companies owning the atomic power plants, but not the people who might be injured in the event of a reactor accident.

The AEC witnesses testified that it has not been determined what premium the government should charge private firms for liability indemnification. This amount once arrived at, they said, would represent administrative costs. AEC explained that it was not suggested that such premiums be used to accumulate any sizable government fund, because "this is not a field in which we assume that there will be any losses." Two bills in the hopper provide for a combination of commercial and governmental reactor insurance. These were introduced by Representatives Price and Cole.

FPC Rule on Reporting by Gas Producers

THE FPC has adopted a proposed rule that will require independent producers to furnish the commission with reports on 1955 sales of natural gas—but only as to that gas which moves in interstate commerce. The rule was modified, in the face of considerable producer opposition, so as to exempt intrastate sales from the reporting process. Producers had objected to the proposed rule changes on the ground that any FPC requirement of reports on intrastate sales would go beyond the commission's jurisdiction and would be an invasion of states' rights.

The commission also extended the deadline for filing the financial reports from May 1st to June 30th. In issuing its filing order, FPC emphasized that the rule will enable the commission to check rate schedules previously filed, aid the staff in studying field prices, and make it possible for the commission to classify producers on the basis of the size of their sales and revenues. The financial reports may be limited to a producer's "gross working interest" in sales made under each of the rate schedules filed with the commission. The filers must state whether they are operators with respect to each filed rate schedule and the percentage of "gross working interest" under each schedule.

Telephone and Telegraph

Bell-USITA Toll Agreement

AGREEMENT on recommended settlement schedules which, if adopted, would increase toll revenues of independent companies by approximately $11,000,000 annually, was announced recently by spokesmen for the United States Independent Telephone Association and Bell system companies.

The proposed schedules are based on joint nation-wide studies of independent company average costs in handling interchanged toll traffic. Further increases are expected to result as manual exchanges are converted to dial, and as toll circuits are added.

The revised settlement schedules, prepared by the USITA committees and Bell system representatives, now are being distributed to companies affected.

"These schedules—the result of the most extensive and comprehensive study ever made for this purpose—should encourage the continuance of industry-wide efforts to furnish modern, efficient, and high-quality toll service," the USITA and Bell system spokesmen said. They are not intended for application, however, wherever it is believed that they would not prove beneficial to the independent company, or where a special individual study would provide a better basis for settlement arrangements.

If new contracts utilizing the recommended schedules are negotiated by individual Bell and independent companies within sixty days after the contracts are presented, the effective date of the new contract will be as of the regular billing round in January, 1956. A contract signed after the 60-day period will be effective in the month in which it is signed.

DETAILED cost studies of several hundred independent company exchanges and toll circuit groups selected on a sampling basis were made. These studies were undertaken principally to determine if the portion of toll revenue accruing to the independent companies was adequate and the extent to which the average costs of handling toll calls differ among the varying types of operation. Specific procedures and forms for the studies were developed jointly by USITA and Bell representatives.

To obtain a representative cross-section picture, the 8,800 independent company exchanges directly connecting with Bell system exchanges were classified and grouped by sizes, type of operation, and toll revenue characteristics for the sample selection purposes.

Detailed cost studies made by some 350 independent companies were completed in about 600 exchanges handling "A" func-

tions (use of local facilities, commercial and revenue accounting work) and 425 exchanges handling "B" functions (traffic, operating, ticketing, and timing of toll messages). Studies also jointly undertaken by the Bell companies and the USITA of over 625 independent company toll circuit groups were completed coincident with the completion of the "A" and "B" studies.

During the study period, the USITA maintained an office in New York as headquarters for the subcommittee working on the study. This office was the contact point for the participating independent companies and facilitated working with the Bell representatives.

In addition to keeping in touch with the study companies by telephone, telegraph, and mail, certain members of the subcommittee also made a number of visits to independent companies making the studies. Many associated Bell company people also worked with the independents in the introduction of the study procedures and assisted in computation, summarization, and review of the data.

FOLLOWING summarization of the data, analyses of the available information were made by the USITA committee members and Bell representatives. The studies indicated that a number of changes in settlements were warranted. It was jointly concluded that separate schedules of settlements were desirable for manual and dial exchanges, as well as for large and small exchanges. It was also concluded that an average schedule for line haul based upon the independent company circuit miles furnished and interchanged messages flowing over the circuits appeared more reasonable for use than a prorate of the originating revenue remaining after deductions of settlements for "A" and "B" functions—the plan now in general use.

Both USITA committee and Bell representatives emphasized that the ultimate decision as to whether or not the new suggested schedules are adopted by individual companies is a matter for negotiation between each independent company and its connecting Bell company.

Co-op Sale Appealed

THE Putnam county circuit court at Greencastle, Indiana, has been asked to set aside an order of the Indiana Public Service Commission, dated December 22, 1955, which approved the sale of properties of a small independent telephone company to a newly organized REA co-operative. The appeal has been taken by General Telephone Company of Indiana, which indicated to the commission that it was desirous of purchasing the properties and improving the service.

The smaller company, whose properties were involved, is the Indiana Midland Telephone Company which operates three exchanges at Cloverdale, Putnamville, and Eminence, respectively, all in Indiana. The co-operative involved is the Clay County Rural Co-operative, Inc.

The main point on appeal is the General Company's contention that the commission acted adversely to the spirit and intent of the REA statute when it approved the proposal of the co-operative to take over and serve territory in which an established commercial company was ready, willing, and able to render all necessary service. The General Company's appeal pointed to the "spirit and intent" of Congress in setting up the rural loan program. For example, on July 22, 1953, the congressional committee report on the 1954 Department of Agriculture appropriation bill stated:

> In keeping with the spirit and intent of the Rural Telephone Act, the com-

mittee believes that REA should actively encourage the private telephone industry to use private capital to extend its service into rural areas. There are rural areas which private enterprise cannot or will not serve adequately, and the purpose of the rural telephone program is to make possible the provision of service in such areas, where economically feasible.

The Indiana commission's opinion approving the sale of the properties to the co-operative did not discuss the issue of congressional intent in the REA statute, as far as the action of the majority was concerned. The majority decision simply recited the facts of the petitions and conclusions of the order. There was a dissenting opinion by Commissioner Belshaw, however, which condemned the decision of the majority as being an attempt to substitute the commission's conclusion for that of the officers of the respective companies. Belshaw said the issue was basically one of public *versus* private ownership.

General Acquires Cable Interests

GENERAL TELEPHONE CORPORATION, the nation's biggest independent phone company, plans to acquire about a 15 per cent interest in the General Cable Corporation through an exchange of common stock. General Cable is the leading independent maker of wire and cable, and a General Telephone spokesman said, "We are acquiring a portion of its stock as an investment and to help insure our future supplies of telephone wire and cable."

General Telephone says it is now buying these supplies from "every major firm in the business, including American Telephone and Telegraph Company's manufacturing subsidiary, Western Electric." But because of General Telephone's merger late last year with Theodore Gary & Co., second biggest independent phone company in the United States, General's sales of new phones and its demand for telephone wire and cable have mushroomed. The stock exchange with General Cable is said to be an insurance policy against a shortage of these supplies holding up the telephone company's expansion.

Under the plan, General Telephone will give 166,667 of its common shares in exchange for 250,000 shares of General Cable. General Cable will also give General Telephone 125,000 of its shares in exchange for the Alphaduct Wire & Cable Company, a small General Telephone subsidiary with a plant in New Brunswick, New Jersey, that manufactures telephone "drop lines" used in running lines from outside phone cables into subscribers' properties.

Both General Telephone and General Cable have applied to the New York Stock Exchange for permission to list the additional common shares involved in the swap.

Mexico's Phone Expansion

A THREE-YEAR telephone expansion program through 1957, with an estimated budget of 500,000,000 pesos ($40,000,000), is nearing the halfway mark, Hugo G. Beckman, general director of Telefonos de Mexico, reported recently.

During 1955 a total of 115,000,000 pesos ($9,300,000) was spent by the company in extending lines, installing new automatic equipment and new buildings. Expenditures for the 1956 program are estimated at 150,000,000 pesos ($12,000,000). Money for the improvements, he said, is being obtained from reinvested profits, depreciation and sinking funds, sale of securities, increase of capital stock, and loans.

Financial News and Comment

By OWEN ELY

High Lights of 1955 Reports to Stockholders

As customary at this time of the year, we summarize as follows the "high lights" of 1955 reports to stockholders, arranging the material by major topics of interest:

Format of Annual Reports. The text of Arizona Public Service Company's 1954 report had a unique feature borrowed from the comic strips—two Mexican characters interviewing President Henry Sargent. The company's new chief executive, Walter Lucking, has pulled a similar "stunt" by issuing an annual report in the form of a news tabloid. This report is full of pictures (many colored), interspersed with human interest stories, such as "The good old days are finally here," "Arizona—the z is for zoom," etc. Using the larger format enabled the company to include in the 23 pages several times the amount of material contained in the average stockholders' report, with the usual statements, statistics, and charts. Long Island Lighting goes to the other extreme with a report measuring 9" x 6". Why not go all the way and adopt the *Reader's Digest* pocket-size—7½" x 5½"?

The utility dollar "pie chart"—both income and outgo—is a well-known feature of many utility reports, but Middle South Utilities has improved on this by separating the segments of the dollar, which makes for a neater presentation. Boston Edison devotes a page to dollar income and outgo, illustrating the percentages pictorially.

General Public Utilities' report remains rather unique, the first few pages being set up in tabloid form with headlines and heavy type. The company's fight to retain control of Manila Electric Company is described in some detail.

A few reports, such as those of Public Service of Colorado and Montana Power, portray beautiful mountain views, etc., worthy of framing. Southwestern Public Service's color work is outstanding and Virginia Electric's two-page colored map is rather unique. The practice of using a special two-page spread (usually the back cover) which opens out for a better view of charts, pictures, etc., seems to be gaining.

Historical charts are usually of the "bar" type, but it would seem to the writer

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that some use might be made of full-page *logarithmic* charts combining a number of unlike items and covering a longer period of years than a decade. Among such items might be electric and gas sales both in physical and dollar amounts, plants, revenues, gross and net income, share earnings, dividends, etc. Possibly some efficiency figures could be presented in another chart, such as the cost of producing one kilowatt-hour, Btu per kilowatt-hour, cost per million Btu, reserve generating capacity, etc. The report of Central & South West presents some of these data.

The reports of Dayton Power & Light and Northern States Power contain more detailed historical tables than those of most companies; Portland General Electric presents its table in the form of a separate leaflet. New England Gas & Electric's table goes back to 1931, but only ten items are shown.

Many utilities continue to feature the fact that the residential cost of electricity has shown a continuous downward trend while the cost of living has spiraled upward. Baltimore Gas & Electric presents a chart showing *both* gas and electric rates as contrasted with the cost of living. While the cost of manufactured gas rose sharply during 1946-49, the introduction of natural gas quickly brought it down again. At the end of 1955 the score in Baltimore was: cost of living up 98 per cent, electricity down 19 per cent, gas down 8 per cent.

WHO *Are the Stockholders?* Many utilities describe their stockholder lists but the practice could be broadened. Central Illinois E&G reports that 29 per cent of its shares are held in the home state, with the balance in 47 states and some foreign countries. About 41 per cent of the shares are owned by women, 26 per cent by men, 17 per cent in joint accounts, and 16 per cent by institutions, brokers, nominees, etc.

There is surprisingly little discussion of dividends in reports—the most important topic to stockholders. However, a few companies such as Washington Water Power, Pacific Power & Light, and Southwestern Public Service are fortunate in being able to advise stockholders that part of their dividends are nontaxable as income.

Employees. Annual reports are paying somewhat more attention to employees; for example, Kansas P&L devotes two pages of its report to "Our Employee Team." The number of employees with long service records is shown and a chart reflects the increasing number of customers served per thousand man-hours.

AREA *development* continues a popular topic. New England, often maligned because part of its textile industry has moved south, is rapidly getting new and diversified industrial units to fill the vacuum. Boston Edison's report contains a two-page spread of plant photos under the heading "Electronics—Growing Greater in Greater Boston." The report states:

> Inventive genius has been a distinguishing characteristic of New Englanders for more than three centuries. . . . A very important factor in that revolution will be electronics. From New England's great institutions of learning, and from new plants which are springing up all over Greater Boston, are coming the men and the ideas which will contribute to the success of this new development in our economic history.

New England Gas & Electric's report also stresses the new "diversification" of industry in New England with a two-page spread to prove it. New England Electric's

report lists its twenty largest customers—only two are textile companies.

Rockland Light & Power and Central Hudson G&E continue to feature the beneficial effects of the New York state through way and the several new or proposed bridges across the Hudson. Delaware P&L features the expansion of industry and population in the Delmarva peninsula. Minnesota P&L's report stresses the $500,000,000 new investment in plants to process taconite (low-grade iron ore), but also mentions the increasing importance of forest products. Montana Power's report describes the rapid development of the state's economy in the past decade, with the value of tourist travel up 444 per cent, lumbering 392 per cent, oil and gas 144 per cent; minerals 124 per cent, etc. Duquesne Light describes the proposed huge slum clearance in Pittsburgh, to be replaced by a fabulous civic auditorium, exhibition halls, and apartment developments near the downtown business section.

PUBLIC *Relations.* It seems strange that the average report does not mention the publicity obtained in the newspapers, etc. Interstate Power reproduces parts of a large number of newspaper clippings about the company, including one headed "M. L. Kapp Tells New York Analysts about Progress of Interstate Power."

Public Power Issues. Few of the utilities discuss topics of broad general interest such as public power, except when specific projects in their own areas are concerned. However, Public Service of Colorado includes a four-page folder in its report on "Federal Power Policies and Tax Inequalities." This discusses power resource development, Hell's Canyon, Niagara, TVA, the preference clause, and tax inequality. This seems to be one of the best efforts to educate the general public on this important subject. Of course the upstate New York utilities give some attention to public power, with special reference to the Niagara and St. Lawrence projects.

Northern States Power reports that the big federal power developments on the Missouri river should not have any material effect on the company since all firm power is expected to be consumed by present preference customers. The company will wheel some of this power, and no additional federal transmission lines other than those now authorized are expected to be built. Gulf States Utilities describes several large proposed federal projects in its area. It has offered to buy the power to be developed in the 42,000-kilowatt plant proposed at McGee Bend, but has engaged engineers to prove that the proposed 500,000-kilowatt (peaking) project on the Brazos river, proposed by an agency of the state of Texas, is not economically feasible. Carolina Power & Light has signed a 10-year contract with SPA for disposition of one-third of the output of the John H. Kerr project, which includes wheeling of power to preference customers.

THE federal program of sponsoring and building large hydro projects has been gradually slowing down, with the completion of certain projects on the Missouri river and in the Pacific Northwest.

While Hell's Canyon is still a Democratic rallying cry, the Northeast has recently stolen the limelight from the Northwest. A fight occurred last year over the method of transmitting power from the St. Lawrence project, which the New York State Authority under Bob Moses is constructing. Now the political struggle between the authority and the private utilities to build the Niagara power project is being debated in Congress. (The Senate recent-

ly passed a bill to give the authority the project, but it is very doubtful whether the House will take any action.) Naturally, the three upstate New York utilities, Niagara Mohawk, New York State Electric & Gas, and Rochester Gas & Electric —feature this topic in their annual reports.

RATES. While there are fewer rate cases pending than in previous years among the electric utilities, a number of companies give brief mention to changes which occurred in 1955. Long Island Lighting describes its elimination of zone rates and other proposed changes which should increase earnings. Interstate Power mentions its adjustment of gas rates and the compensatory rate adjustments in its industrial and wholesale electric rates. Middle South Utilities discusses its celebrated Arkansas rate case, which thus far has worked out unfavorably. Gulf States reduced rates $1,321,000 last year. Public Service of Indiana mentioned the unfavorable commission decision in its $4,500,000 rate increase application, which was successfully appealed to the courts. Duquesne Light tells about a "modest reduction in industrial rates" ordered by the Pennsylvania commission. Kansas City P&L obtained a rate increase last April of about $4,000,000; Kansas P&L obtained an increase in gas rates of nearly $1,000,000 and other increases are subject to approval. Virginia Electric & Power's 1954 rate increases were upheld by the courts in 1955.

THE *Heat Pump.* Because air conditioning has become somewhat of a summer burden, the southern utilities are now paying greater attention to the heat pump as the best means to balance the summer load by adding winter heating. Florida Power Corporation reports that it added 1,165 pump units last year, more than double the number in the previous year, and these "have proven to be an ideal source of revenue in that they provide substantial load with little additional generating facilities needed. . . . Our pioneering efforts. . . . have been highly satisfactory. The company has about one-third of all the heat pumps in the United States."

Use of Electronic Computers. Bookkeeping and statistical equipment has made rapid strides in recent years, and many utilities are installing computers for billing, accounting, and engineering work. Cincinnati G&E has an electronic computer which uses a magnetic drum for the calculation and production of customers' bills. This is expected to result in material benefits in economy, speed, accuracy, and increased billing capacity. Commonwealth Edison has also made a changeover of customers' billing to a large electronic computer and anticipates substantial net savings. Ohio Edison's report pictures its electronic brain, which can select the most efficient of the system's generating units and control their operations. It is called an electronic differential analyzer, and will actually manipulate the throttles of turbogenerators by impulses over carrier telephone circuits to power plants.

TAXES. While taxes remain one of the most important items in the utility budget, comparatively few companies give a complete breakdown. Exceptions are Pacific G&E and Consolidated Edison of New York. The latter pays at least seven kinds of local taxes, six or more state taxes, and five kinds of federal taxes. Every utility is doubtless worried about the high cost of taxes, but only a few of them dramatize the topic. Dayton Power & Light presents some charts with the following interesting statistics: "Every hour of every day DP&L paid $1,624 in taxes"; "We paid $5,873 for each employee"; "Taxes per common share $5.43 *versus* earnings of

$3.30"; "We paid taxes to 609 federal, state, and local taxing units."

STORMS. Last year floods superseded hurricanes as an adverse earnings factor for certain utilities. Connecticut and Pennsylvania suffered most. Pennsylvania P&L took philosophically the $500,000 cost of the Stroudsburg flood, remarking that for fifteen years "sleet, snow, high winds, or rain have produced an average of one major storm or flood a year."

Fuel Costs. The prosperity of the southern utilities has been due in part to a supply of cheap natural gas as boiler fuel. Now this fuel is becoming more expensive. However, the higher cost may be offset by gains in generating efficiency, and some companies have fuel clauses which permit them to pass on the higher costs to consumers automatically. Gulf States Utilities' report describes the rising cost of gas for two of its plants (about 18 cents this year *versus* 10 cents last year) though other plants are protected by longer-term contracts; fuel clauses in commercial and industrial rates will recover about 70 per cent of increased fuel prices.

NATURAL *Gas.* The increased use of gas for house heating is a major topic in the reports of Consolidated Edison, Long Island Lighting, and others which have to "merchandise" their gas. Con Edison has shown its movie "Hey Charlie" in nearly 2,000 homes of customers to demonstrate the advantages of house heating and dispel misunderstandings regarding competitive fuel costs. Long Island Lighting's campaign to increase space heating went into high gear last year, with sales of heating units up 133 per cent and water heaters 41 per cent. Increased gas is being obtained from Tennessee Gas.

On the other hand, the companies with a backlog of house-heating demand are more interested in getting the gas—they do not have to merchandise it. The Iowa companies could expand their space-heating business if they could get more gas; and they also have problems due to rising gas costs. Iowa-Illinois G&E had hoped that the Herscher storage project sponsored by Peoples Gas would take care of its space-heating expansion for many years to come, but this has proven disappointing and the company must now seek gas elsewhere. Iowa Public Service presents two interesting 10-year charts relating to its gas business—one showing the growth in the number of heating customers and total gas customers; the other shows the rise in the cost of purchased gas and the delay before the suppliers' rate increases are approved by the SEC. The rate in effect last year was more than double the rate in effect a few years earlier, before the first increase went into effect.

Louisville G&E has been one of the pioneers in developing underground storage and is currently storing nearly five billion cubic feet; the company is fortunate in having a geographical structure for storage within 40 miles of the city. Northern Indiana PS gives an interesting cross-section sketch of the geological features of the Herscher dome—showing fossil remains at various depths down to the 1,800-foot level.

HYDRO *Projects.* Puget Sound P&L is a leading proponent of the administration's "partnership" idea—it is now teaming up with PUD's, with which it used to be at odds. Its report devotes many pages to the proposed Rock Island-Rocky Reach hydro projects and also the ambitious Mica Creek project of the Puget Sound Utilities Council. Pacific G&E has made a partnership proposal to the federal government to install 362,000-kilowatt hydro

plants in the Trinity river project. Washington Water Power's report describes its part in the "first" major partnership proposal—the $310,000,000 John Day project, and Pacific P&L devotes nearly five pages to a similar discussion. Idaho Power describes initial work being done on its Brownlee and Oxbow units (588,000 kilowatts), despite continuing litigation.

Steam Plants in the Ohio Valley. American Gas & Electric's report describes what might be called the renaissance of the coal-burning generating plant: (1) Completion of the 2,300,000-kilowatt OVEC plants under American's leadership in better than scheduled time, at less than estimated cost, and with lowered power production cost. (2) The company's plan to serve Kaiser, Olin-Mathieson, and perhaps other aluminum production plants in the Ohio valley with huge steam-generating plants located near the coal mines and water supply. The report states "What these announcements have meant and will continue to mean to the economy of the entire Ohio valley and to the AG&E system—representing as they do a major shift of policy by the aluminum industry toward low-cost, coal-based electric power—is of enormous significance, the full effect of which, while now readily discernible, will take years to fully manifest itself. . . . We shall certainly need by late 1958 the additional 1,700,000 kilowatts of capacity now under way."

ATOMIC *Power.* Almost every annual report contains a brief reference to the fact that the company is "keeping abreast" of developments in atomic power, and many give some details. Duquesne Light mentions that construction work is on schedule on the pioneer Shippingport atomic power station, with completion scheduled for about a year from now. Detroit Edison presents an interesting picture of the proposed APDA reactor model, with explanatory legends. Commonwealth Edison, which along with Consolidated Edison has recently been authorized to begin construction on their reactor plants, states that a public opinion poll indicates that only about one-fifth of the people know that any electric company is working on an atomic power project. This would seem to call for more publicity. Consolidated Edison's report gives details of its progress thus far. Florida P&L mentions its joint plans to build a nuclear power plant of perhaps 200,000 kilowatts with a target date of 1962-63, and Pennsylvania P&L mentions that it has twenty employees working on its proposed "homogeneous" reactor, which, however, is not yet definitely evaluated.

Financing of Construction Programs. Most companies review their 1955 financing following a discussion of the construction program, and give the year-end capital ratios. Central & South West gives the ratios for 1954 and 1955 and also an estimate for the end of 1956, after a detailed discussion of its 1956 program.

Stockholders and Wall Street analysts are particularly interested in the amount and timing of equity financing.

ACCELERATED *Depreciation.* A few companies have explained to stockholders what they are doing about the new methods of accruing accelerated depreciation, and indicate whether the resulting savings in income taxes are being credited to share earnings or offset by a tax deferral item. Other utilities are content to cover the item briefly in a footnote to the financial statements. Stockholders are entitled to definite and detailed information regarding the company's methods of handling both accelerated amortization and depreciation. While these subjects are somewhat esoteric, the company should try to reduce them to ABC language for stockholders.

Reproduction Cost in the Balance Sheet

In its 1955 report to stockholders, Indiana Telephone Corporation has followed the lead of Iowa-Illinois Gas & Electric in sponsoring the idea of showing plant reproduction cost in the balance sheet, with special reference to the need for higher depreciation accruals and reserves. The company's telephone plant is assigned a normal value of $6,941,804 in column A but is restated in column B at $9,184,797, reflecting reproduction cost. Depreciation reserve is stated as $1,719,911 in A and $2,392,379 in B. A considerable part of the president's message to stockholders is concerned with a discussion of the inadequacies of existing accounting classifications because of their failure to recognize present-day costs and their importance in relation to depreciation accruals and rates.

Mr. Goodrich concluded that "to the extent the governmental body charged with fixing our prices does not recognize the full correct cost of operation as explained in this report, and bases our rates on an accounting system that does not recognize this full cost, to that extent it is confiscating our real property and giving it to the users of our services by government fiat." He pointed out that if an accountant were dealing with a company operating partly in Canada and partly in the United States, Canadian dollars would be converted into American dollars in reporting to the American stockholders. As a parallel case he held that the depreciation charge should be geared to present-day replacement dollars rather than to original cost dollars.

The Indiana Telephone Corporation has "put it on the line" by reporting economic facts as well as required accounting facts in alternative columns. If more companies would do this—and we cannot see substantial objection to it—there might be a broader understanding and, perhaps eventually, a wider acceptance of economic (as distinguished from merely cost accounting) reporting of plant assets and depreciation in terms of true dollar values.

DATA ON ELECTRIC UTILITY STOCKS

Rev. (Mill.)			*5/16/56 Price About*	*Div. Rate*	*Approx. Yield*	*Share Earnings* Cur. Period*	*% Increase*	*12 Mos. Ended*	*Price-Earns. Ratio*	*Dividend Pay-out*	*Common Stock Equity*
$258	S	American Gas & Elec.	56	$2.00	3.6%	$3.00**	15%	Mar.	18.7	67%	34%
39	O	Arizona Pub. Serv.	23	1.00	4.3	1.35	D2	Mar.	17.0	74	31
10	O	Arkansas Mo. Power	25	1.24c	5.0	1.90	10	Mar.	13.2	65	30
27	S	Atlantic City Elec.	29	1.20	4.1	1.51	6	Mar.	19.2	79	27
118	S	Baltimore G. & E.	34	1.60	4.7	2.21	23	Mar.	15.4	72	41
6	O	Bangor Hydro-Elec.	33	1.80	5.5	2.44	6	Mar.	13.5	74	31
5	O	Black Hills P. & L.	26	1.28	4.9	2.15	8	Jan.	12.1	59	27
91	S	Boston Edison	54	2.80	5.2	3.40	9	Dec.	15.9	83	53
19	A	Calif. Elec. Power	15	.70	4.7	.93	30	Mar.	16.1	75	35
17	O	Calif. Ore. Power	33	1.60	4.8	2.08	17	Nov.	15.9	77	37
7	O	Calif. Pacific Util.	28	1.50	5.4	2.20**	2	Dec.	12.7	68	29
58	S	Carolina P. & L.	25	1.10	4.4	1.65	15	Feb.	15.1	67	37
26	S	Cent. Hudson G. & E.	17	.80	4.7	1.04	4	Mar.	16.3	77	33
19	O	Cent. Ill. E. & G.	27	1.40	5.2	2.21	16	Mar.	12.2	63	30
33	S	Cent. Ill. Light	56	2.60	4.6	4.01	27	Mar.	14.0	65	41
50	S	Cent. Ill. P. S.	32	1.60	5.0	2.44	15	Mar.	13.1	66	35
11	O	Cent. Louisiana Elec.	33	1.40	4.2	1.90	25	Mar.	17.4	74	31
33	O	Cent. Maine Power	23	1.40	6.1	1.70	2	Mar.	13.5	82	33
114	S	Cent. & South West	37	1.40	3.8	2.11	11	Mar.	17.5	66	36
11	O	Cent. Vt. P. S.	17	1.00	5.9	1.22	D7	Mar.	13.9	82	28
108	S	Cincinnati G. & E.	27	1.20	4.4	2.01	12	Mar.	13.4	60	39

Rev. (Mill.)		(Continued)	5/16/56 Price About	Div. Rate	Approx. Yield	Share Earnings* Cur. Period	% Increase	12 Mos. Ended	Price-Earns. Ratio	Dividend Pay-out	Common Stock Equity
6	O	Citizens Util.	16	.48a	6.0a	1.07	3	Mar.	15.0	44	40
104	S	Cleve. Elec. Illum.	38	1.60	4.2	2.49	30	Dec.	15.3	64	47
4	O	Colo. Cent. Power	28	1.20	4.3	1.59	2	Mar.	17.6	75	24
45	S	Columbus & S. O. E.	31	1.60	5.2	2.22	28	Mar.	14.0	72	37
336	S	Commonwealth Edison	41	2.00	4.9	2.67	4	Mar.	15.4	75	47
10	A	Community Pub. Serv.	22	1.20	5.5	1.78	—	Mar.	12.4	67	51
2	O	Concord Electric	44	2.40	5.5	2.71	3	Dec.	16.2	89	61
65	O	Connecticut L. & P.	19	.98	5.2	1.16	2	Mar.	16.4	84	33
21	O	Connecticut Power	41	2.25	5.5	2.81	22	Dec.	14.6	80	42
494	S	Consol. Edison	46	2.40	5.2	3.18	7	Mar.	14.5	75	41
189	S	Consumers Power	49	2.20e	4.5	3.23	11	Mar.	15.2	68	41
61	S	Dayton P. & L.	47	2.20	4.7	3.30	12	Dec.	14.3	67	37
34	S	Delaware P. & L.	40	1.60	4.0	2.43	12	Mar.	16.5	66	32
220	S	Detroit Edison	34	1.80	5.3	2.24	14	Mar.	15.2	80	42
120	A	Duke Power	30	1.20	4.0	1.86	16	Mar.	16.1	65	54
89	S	Duquesne Light	36	1.80	5.0	2.44	16	Mar.	14.8	74	36
27	O	Eastern Util. Assoc.	35	2.20	6.3	2.64	15	Mar.	13.3	83	36
2	O	Edison Sault Elec.	16	.80	5.0	1.19	NC	Mar.	13.4	67	40
10	O	El Paso Elec.	40	1.80	4.5	2.48	2	Mar.	16.1	73	37
11	S	Empire Dist. Elec.	30	1.60	5.3	2.21	17	Mar.	13.6	72	30
4	O	Fitchburg G. & E.	55	3.00	5.5	3.52	8	Dec.	15.6	85	55
43	S	Florida Power Corp.	46	1.60	3.5	2.40	17	Mar.	19.2	67	33
93	S	Florida P. & L.	43	1.20	2.8	2.17	27	Mar.	19.8	55	40
163	S	Gen. Pub. Util.	36	1.80	5.0	2.73	9	Mar.	13.2	66	39
6	O	Green Mt. Power	33	1.80	5.5	2.46	7	Mar.	13.4	73	37
51	S	Gulf States Util.	36	1.60	4.4	2.16	13	Mar.	16.7	74	31
21	A	Hartford E. L.	57	2.75	4.8	3.97	7	Mar.	14.4	69	47
5	O	Haverhill Elec.	39	2.35	6.0	2.62	34	Dec.	14.9	82	100
66	S	Houston L. & P.	50	1.40	2.8	2.63	20	Mar.	19.0	53	42
8	O	Housatonic P. S.	24	1.40	5.8	1.41	19	Dec.	17.0	99	54
25	S	Idaho Power	32	1.20	3.8	1.96	7	Mar.	16.3	61	35
78	S	Illinois Power	54	2.60	4.8	3.65	17	Mar.	14.8	71	35
40	S	Indianapolis P. & L.	28	1.40	5.0	1.96	27	Mar.	14.3	71	38
19	S	Interstate Power	14	.74	5.3	1.04	4	Mar.	13.5	71	31
30	O	Iowa Elec. L. & P.	28	1.50	5.4	2.18	14	Mar.	12.8	69	31
31	S	Iowa-Ill. G. & E.	31	1.80	5.8	2.37	3	Mar.	13.1	76	40
35	S	Iowa Power & Lt.	26	1.40	5.4	2.15	NC	Mar.	12.1	65	35
30	O	Iowa Pub. Service	16	.80	5.0	1.06	10	Feb.	15.1	75	33
13	O	Iowa Southern Util.	22	1.20	5.5	1.71	7	Mar.	12.9	70	36
56	S	Kansas City P. & L.	38	2.00	5.3	2.68	28	Mar.	14.2	75	35
27	S	Kansas G. & E.	27	1.20	4.4	1.84	4	Mar.	14.7	65	26
40	S	Kansas Pr. & Lt.	23	1.20	5.2	1.90	21	Mar.	12.1	63	27
37	O	Kentucky Util.	26	1.28	4.9	2.03	D4	Mar.	12.8	63	35
7	O	Lake Superior D. P.	24	1.20	5.0	1.62	14	Mar.	14.8	74	38
6	O	Lawrence Elec.	30	1.75	5.8	1.87	34	Dec.	16.0	94	62
17	S	Long Island Ltg.	23	1.10	4.8	1.49	35	Mar.	15.4	74	34
41	S	Louisville G. & E.	57	2.00	3.5	3.92	22	Mar.	14.5	51	35
7	O	Lowell Elec. Lt.	56	3.35	6.0	3.64	19	Dec.	15.4	92	59
9	O	Lynn G. & E.	29	1.60	5.5	2.03	1	Dec.	14.3	79	76
8	O	Madison G. & E.	45	1.60	3.6	3.46	8	Dec.	13.0	46	47
4	A	Maine Pub. Service	17	1.08	6.4	1.03	D30	Mar.	16.5	105	31
5	O	Michigan G. & E.	45	1.50b	6.3g	3.66	20	Dec.	12.3	41	35
144	S	Middle South Util.	29	1.50	5.2	2.25	4	Mar.	12.9	67	35
26	S	Minnesota P. & L.	28	1.40	5.0	2.16	23	Apr.	13.0	65	34
2	O	Miss. Valley P. S.	30	1.40	4.7	2.50	3	Apr.	12.0	56	31
10	A	Missouri Pub. Ser.	13	.60	4.6	.94	10	Mar.	13.8	64	29
5	O	Missouri Util.	24	1.36	5.7	1.83	D3	Mar.	13.1	74	36
37	S	Montana Power	45	1.80	4.0	3.09	18	Mar.	14.6	58	36
130	S	New England Elec.	17	1.00	5.9	1.24	7	Dec.	13.7	81	33
40	O	New England G. & E.	17	1.00	5.9	1.48	14	Mar.	11.5	68	40
44	O	New Orleans P. S.	45	2.25	5.0	2.57	D1	Mar.	17.5	88	40
2	O	Newport Elec.	22	1.00	4.5	1.40	16	Jan.	15.7	71	34
77	S	N. Y. State Elec. & Gas	38	2.00	5.3	2.85	19	Mar.	13.3	70	38
210	S	Niagara Mohawk Pr.	33	1.80	5.5	2.24	4	Mar.	14.7	80	34
75	O	Northern Ind. P. S.	37	1.80	4.9	2.82	11	Mar.	13.1	64	33
118	S	Northern Sts. Power	17	.90	5.3	1.16	10	Mar.	14.7	78	33
9	O	Northwestern P. S.	17	1.00	5.9	1.44	10	Mar.	11.8	69	25

Rev. (Mill.)		(Continued)	5/16/56 Price About	Div. Rate	Approx. Yield	Share Earnings* Cur. Period	% Increase	12 Mos. Ended	Price-Earns. Ratio	Divi-dend Pay-out	Common Stock Equity
123	S	Ohio Edison	53	2.48	4.7	3.64	16	Mar.	14.6	68	38
40	S	Oklahoma G. & E.	37	1.70	4.6	2.20	17	Mar.	16.8	77	30
15	O	Otter Tail Power	27	1.60	5.9	2.21	16	Mar.	12.2	72	34
443	S	Pacific G. & E.	51	2.40	4.7	3.39	9	Mar.	15.0	71	33
44	O	Pacific P. & L.	29	1.48	5.1	1.86	18	Feb.	15.6	80	28
123	S	Penn Power & Lt.	47	2.40	5.1	3.19	6	Mar.	14.7	75	29
210	S	Philadelphia Elec.	38	1.80	4.7	2.45	8	Mar.	15.5	73	40
32	O	Portland Gen. Elec.	24	1.10	4.6	1.69	14	Jan.	14.2	65	39
58	S	Potomac Elec. Pr.	23	1.10	4.8	1.52	41	Mar.	15.1	72	40
77	S	Pub. Serv. of Colo.	45	1.80	4.0	2.73	19	Mar.	16.5	66	38
273	S	Pub. Serv. El. & Gas	33	1.80	5.5	2.26	16	Dec.	14.6	80	37
67	S	Pub. Serv. of Indiana	37	2.00	5.4	2.38	D2	Mar.	15.5	84	33
26	O	Pub. Serv. of N. H.	17	1.00	5.9	1.20	2	Apr.	14.2	83	36
11	O	Public Serv. of N. M.	13	.68	5.2	1.03	8	Mar.	12.6	66	33
23	S	Puget Sound P. & L.	26	1.28	4.9	1.57	11	Mar.	16.6	82	56
52	S	Rochester G. & E.	45	2.24	5.0	3.18	13	Mar.	14.2	70	36
17	O	Rockland L. & P.	19	.70	3.7	.97	20	Dec.	19.6	72	29
8	S	St. Joseph L. & P.	23	1.40	6.1	1.70	1	Mar.	13.5	82	40
45	S	San Diego G. & E.	22	.88	4.0	1.38	28	Mar.	15.9	64	40
8	O	Savannah E. P.	35	1.68	4.8	2.24	15	Nov.	15.6	75	36
8	O	Sierra Pacific Pr.	23	1.20	5.2	1.50	11	Mar.	15.3	80	28
154	S	So. Calif. Edison	49	2.40	4.9	3.34	10	Mar.	14.7	72	36
38	S	So. Carolina E. & G.	19	1.00	5.3	1.37	5	Mar.	13.9	73	29
6	O	Southern Colo. Pr.	16	.70	4.4	1.22	1	Feb.	13.1	57	37
210	S	Southern Company	21	1.00	4.8	1.40	16	Mar.	15.0	71	32
16	S	So. Indiana G. & E.	32	1.60	5.0	1.95	D13	Mar.	16.4	82	33
5	O	So. Nevada Power	19	1.00	5.3	1.37	5	Mar.	13.9	73	34
1	O	Southern Utah Pr.	17	1.00	5.9	1.02	10	Mar.	16.7	98	38
3	O	Southwestern E. S.	20	1.08	5.4	1.64	2	Feb.	12.2	66	31
33	S	Southwestern P. S.	25	1.32	5.3	1.51	D3	Mar.	16.6	87	30
21	A	Tampa Elec.	28	1.00	3.6	1.42	8	Mar.	19.7	70	42
127	S	Texas Utilities	39	1.28	3.3	2.04	9	Mar.	19.1	63	38
35	S	Toledo Edison	14	.70	5.0	1.08	10	Mar.	13.0	65	30
12	O	Tucson G. E. L. & P.	31	1.20	3.9	1.70	4	Dec.	18.2	71	33
119	S	Union Elec. of Mo.	27	1.40	5.2	1.70	3	Dec.	15.9	82	37
30	O	United Illuminating	51	2.60	5.0	3.22	3	Dec.	15.8	81	51
5	O	Upper Peninsula Pr.	29	1.60	5.5	2.18	D7	Mar.	13.3	73	36
38	S	Utah Power & Lt.	49	2.20	4.5	3.26	16	Mar.	15.0	67	42
106	S	Virginia E. & P.	43	1.80	4.2	2.64	13	Mar.	16.3	68	34
24	S	Wash. Water Power	37	1.80	4.9	2.16	12	Mar.	17.1	83	45
127	S	West Penn Elec.	26	1.40	5.4	2.09	9	Mar.	12.4	67	29
64	O	West Penn Power	50	2.40	4.8	3.26	7	Mar.	15.3	74	33
11	O	Western Lt. & Tel.	33	1.80	5.5	2.70	32	Dec.	12.2	67	31
24	O	Western Mass. Cos.	41	2.20	5.4	3.19	8	Mar.	12.9	69	52
95	S	Wisc. El. Pr. (Cons.)	33	1.60	4.8	2.44	3	Mar.	13.5	66	39
37	O	Wisconsin P. & L.	25	1.28	5.1	1.75	9	Mar.	14.3	73	35
34	S	Wisconsin Pub. Serv.	22	1.20	5.5	1.77	16	Mar.	12.4	68	35
		Averages			5.0%				14.8	72%	
		Foreign Companies									
188	S	American & Foreign Pr.	15	$ .80	5.3%	$2.00	5%	Dec.	7.5%	40%	46%
137	A	Brazilian Trac. L. & P.	7	.50	7.1	1.26	D6	Dec. '54	5.6	40	70
63	A	British Columbia Pr.	38	1.20	3.2	2.05	37	Dec.	18.5	59	27
16	A	Gatineau Power	29	1.20	4.1	2.06	5	Dec.	14.1	58	30
11	A	Quebec Power	27	1.20	4.4	1.73	11	Dec.	15.6	69	48
45	A	Shawinigan Water & Pr.	87	1.80	2.1	3.48	30	Dec.	25.0	52	35

A—American Stock Exchange. B—Boston Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. D—Decrease. *If additional common shares have been recently offered, earnings are adjusted to give effect to the offering. Percentage change is in the net income available for common stock. **Based on average number of shares. a—Also regular annual 3 per cent stock dividend, which is included in the yield. Stockholders recently were given the choice of taking dividends all in cash or all in stock. b—Also 3 per cent stock dividend December 30, 1955, which is included in the yield. c—Also 2 per cent stock dividend January 1, 1956. e—Also 5 per cent stock dividend June 15, 1956.

What Others Think

The Passing of Lyles Ford

SCRATCH one government power project in South Carolina.

The South Carolina general assembly, during its recently ended 1956 legislative session, repealed all statutes which established the Lyles Ford Tri-County Power Authority. In cold fact, the authority had been a paper organization since its creation in 1934, but its existence, even in a dormant state, became of increasing concern to legislators and laymen who feared it was blocking the industrialization of one of the state's important river valleys.

The area primarily affected is that along the Broad river, which courses southward through upper South Carolina and loses its identity at Columbia, where it merges with the Saluda river to form the Congaree. Three counties—Union, Newberry, and Fairfield—border the river in the territory immediately north of Columbia. Legislators from two of those counties, Union and Fairfield, spurred the successful effort for repeal of the Lyles Ford Act, and encountered no opposition of consequence in either senate or house.

State Senator John D. Long, of Union county, who led the repeal movement, had more than an academic interest in the outcome. His county had been selected by the giant textile firm of Cone Mills as the site for a multimillion-dollar finishing plant. Senator Long knew that the textile firm had no desire to have its Broad river site surrounded by or exposed to a fluctuating hydroelectric reservoir, and he undertook to remove the threat.

OTHER legislators in the region were likewise concerned, not only over the possible adverse effect on the Cone enterprise by continuation of the Lyles Ford Authority, but over the authority's probable but unintentional depressive effect on other potential industrial sites. Officials of the South Carolina State Development Board acknowledged that the continued existence of the Lyles Ford Authority served as an impediment to the location of new industry in the region.

The general assembly took a "bird-in-the-hand" attitude toward the situation, and agreed that the benefits to accrue from industries locating in the river valley now and in the foreseeable future outweighed any problematical benefits which might stem from development of a public power project in the more distant future. During the brief floor debate on the repeal measure, Senator Long observed that a project which had lain dormant during eighteen years of Democratic administration could hardly expect to blossom forth during the current Republican régime.

The plans of the Lyles Ford Authority had been based primarily on Army Engineer studies envisioning "a suitable plan for the comprehensive development of the water resources of the Santee-Congaree-Broad river system to meet the needs for power and navigation."

The authority's chief attention was focused on the possible construction of hydroelectric dams at Frost Shoals, about six miles up the Broad river from Columbia; at Blairs, about 38 miles upstream from Columbia; and at Columbia itself. The last-named project would be a "re-regulating dam" designed to govern the flow of water downstream into the Congaree, thereby improving the navigability of that virtually unnavigable stream.

The Columbia dam admittedly would have been of little value as a source of hydroelectric power.

DURING the relatively long but inactive life of the Lyles Ford Authority, little was done other than the obtaining of a preliminary permit which presumably was to have been followed by preparation of detailed plans for construction and financing. That permit was issued in late 1947 and carried a 12-month period for the assembling of cost estimates and related data.

Subsequently, the period was extended, but due to the low priority accorded the project by the Army Engineers, nothing specific was ever formulated in the way of concrete plans.

One of the few positive accomplishments of the authority was its success in blocking a plan of the South Carolina Electric & Gas Company to build another hydroelectric dam on the Saluda river below the utility company's present Lake Murray development. In 1947, when the power company sought approval to proceed with its construction plans, the Lyles Ford Authority was joined by several South Carolina public officials in a successful effort to have the Federal Power Commission deny such approval.

The basis for that opposition was the fact that the proposed private utility plant would be located in an area due for flooding when and if the Columbia reregulating dam were ever built. The South Carolina Electric & Gas Company was thwarted in its plans for construction of the hydro plant, which would have been a regulated operation, integrated with the discharge of water from the Lake Murray station a short distance upstream.

OUT of the forced abandonment of that plan, however, has come an even larger construction program by the South Carolina Electric & Gas Company. The utility now is beginning construction of a steam plant at approximately the same location, with the initial unit to cost in the neighborhood of $18,000,000 and with the possibility of ultimate expansion to a $34,000,000 plant.

Completion of that new plant, coupled with the existing generation capacity of South Carolina Electric & Gas Company and that of the Duke Power Company, will provide still more power for the Broad river valley. Service areas of the two utility firms converge on that area. The new Cone finishing plant will draw its power from South Carolina Electric & Gas.

Meanwhile, the paper projects of the Lyles Ford Tri-County Power Authority have faded out of the picture altogether.

—W. D. WORKMAN, JR.

Municipal Ownership Loses

VOTERS of Lake City, Florida, a community of less than 10,000 population 60 miles west of Jacksonville, voted almost three to one against municipal ownership of electric service facilities. The issue of municipal ownership of an electric plant had not arisen in the territory of the Florida Power & Light Company since 1944, when Palatka voted down a similar proposal by a somewhat smaller majority—about three to two.

In a hotly contested Lake City election on May 8th the result was 1,808 against and 672 for municipal ownership. The Florida Power & Light Company, which has served the city for thirty years, still has to negotiate for a new franchise. The one under which it had been operating expired on May 1st. For some time prior to the termination of its franchise, the power company had conferred with the mayor and city commissioners in an effort to work out a new franchise. In its offer to the city, the power company included a provision for payment to the city each year of an amount equal to 6 per cent of its revenues from residential and commercial customers in Lake City, inclusive of taxes. It was estimated that this would be about $25,000 the first year. In addition the company offered "immediate benefits," including a modern white-way system on one of the main thoroughfares, to cost $25,000, and $20,000 cash for an airport distribution system.

THE company's offer was not accepted, however. Instead, Mayor Murray Hagan and the commissioners adopted an ordinance on March 22nd calling for a special election to vote on two propositions, which were worded thusly on the ballot:

> 1. For the city of Lake City, Florida, to operate an electric power public utility system. . . .
>
> 2. The city of Lake City, Florida, shall grant a franchise for a period of not longer than thirty (30) years to a public utility company. . . .

Voters were asked to mark an X in a square opposite the proposition they favored. Proposition No. 2 was the overwhelming choice of the electorate.

Robert H. Fite, president and general manager of Florida Power & Light Company, hailed the election results as a resounding endorsement of the American free enterprise system.

"Florida welcomes new industries and venture capital," Fite said, "and Lake City is no different from other cities of Florida in this respect. Its strategic location, abundant raw materials, transportation, and friendly labor conditions make it an attractive site for new industries." Many citizens and businessmen of the town believed a vote for municipal ownership would, among other things, indicate that the community was not friendly toward private enterprise.

Oddly, Lake City once owned its electric plant, but the service was so poor, according to some of the older residents, that thirty years ago the Florida Power & Light Company was invited to make an offer for the facility. Florida has a good many municipally owned electric plants, but most of them were started decades ago when conditions were greatly different.

OPPOSITION to the mayor's plan was spearheaded by a Citizens Committee Opposed to Municipal Ownership, composed of about sixty of the leading businessmen, who held frequent luncheon meetings to plan their campaign. They naturally received strong support from

	FP&L Co. Lake City	*Average Municipal Systems*	*Lake City Lower*
Minimum bill	$1.25	$1.48	23¢
Bill for 25 kwh	2.05	2.39	34¢
Bill for 40 kwh	2.84	3.29	45¢
Bill for 100 kwh	5.31	5.62	31¢
Bill for 250 kwh	9.13	9.17	4¢
Bill for 500 kwh	13.54	13.82	28¢

the Florida Power & Light Company, whose fight against the municipal ownership plan engaged the almost undivided support of some of the company officials for several weeks. Robert H. Fite, president, and Malcolm B. McDonald, vice president in charge of public relations, made Lake City their headquarters for three or four weeks prior to the election.

One of the first steps taken by the power company was to publish a 10-page pamphlet for its Lake City employees in which the situation was thoroughly explained. Copies were of course made available to other citizens. An effective argument was this:

> Federal Power Commission and Edison Electric Institute records reveal that, although 4,297 towns and cities have tried municipal ownership at one time or another, only 1,994 survived by the end of 1955—a total of 2,303 gave it up, and one of them was our own Lake City. When Florida Power & Light Company took over May 1, 1926, the press reflected public attitude as expressed by the voters that it had proved a "white elephant"—and they were glad to have a business-managed private company take over.

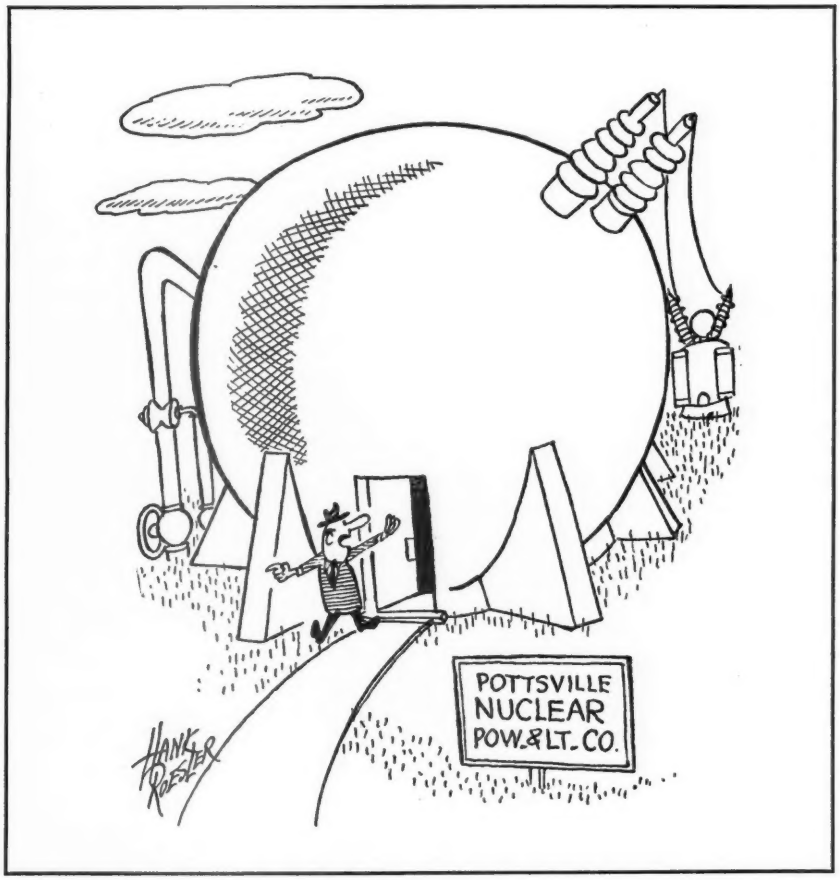
Lake City citizens were probably also impressed by the statement that "if the city owned the plant, it could raise rates any time it wanted to." It was brought out that "rates of private companies . . . are kept fair and reasonable by state regulation. Citizens are protected against arbitrary rate increases. Furthermore, state regulation helps assure good service from a private company, but there would be nothing to prevent deterioration of the property, inefficient management and poor service, the same as occurred right here in Lake City thirty years ago."

It was shown also that FP&L rates in Lake City are lower than the average of municipal systems. (See above table.)

Many of the cities included in the above table operate only distribution systems. The 11 Florida cities that operate their own plants, as Lake City proposed to do, charge the small users even more, as shown by the comparison in table below.

It is difficult to analyze any election result and to tell precisely what was in the minds of the voters, but from discussions in Lake City prior to the election it would appear that one of the most effective arguments used by opponents of municipal ownership was that the city would have had to go into debt to the extent of $3,000,000 to $5,000,000. It would have had

	FP&L Co. Lake City	*Average Municipal Systems*	*Lake City Lower*
Minimum bill	$1.25	$1.60	35¢
Bill for 25 kwh	2.05	2.50	45¢
Bill for 40 kwh	2.84	3.43	59¢



"HOLD EVERYTHING, FELLOWS! I LEFT THE ENTIRE POWER SUPPLY IN MY OTHER SUIT!"

to purchase the power company's distribution system and build a municipal diesel generating plant. Florida Power & Light Company brings power into Lake City from its Palatka plant, maintaining in Lake City only a stand-by generator for emergencies. There was considerable opposition to the idea of putting the city into debt to the extent that would have been required.

THERE was also a doubt among the citizenry, it appeared, as to whether a city-managed system could be operated as efficiently as the privately owned system. The city commission had passed a resolution creating a utility commission, of which the mayor would be the chairman and four other members would be appointed by the governor to serve without remuneration, these four to be recommended by local groups such as the chamber of commerce, Rotary Club, Kiwanis Club, etc.

Besides having the opposition of the Citizens Committee Opposed to Municipal

Ownership, the mayor and commissioners also had against them the local weekly newspaper. The mayor got his story to the voters by radio and printed circulars. At one stage of a bitter battle of words a citizen asked for a court injunction to prevent the mayor from spending city funds to wage his campaign. In an advertisement the Citizens Committee charged that "your city officials have been spreading downright lies among you about your newspaper, your power company and its employees through pamphlets and over the radio."

IN another advertisement the Citizens Committee Opposed to Municipal Ownership said:

> We have studied it (the municipal light plant proposal) carefully and are convinced that Lake City cannot afford to take chances on the inefficiency of a political-managed system, poor service, uncertain rates, and increased city debt.

The *Lake City Reporter* asked this question: "Is it right for any type government to wipe out private enterprise?" The answer of the voters was emphatically "no."

PRESIDENT Fite of FP&L believes this election, following on the heels of other elections on its system, will help to convince investors that Florida is a business-managed state. "We have no state income tax, no state property taxes, and no punitive tax of any kind," said Mr. Fite.

—C. E. WRIGHT

Special Aspects of Municipal Utility Ownership

THERE seems to be a disposition on the part of some in almost every community to attempt to make the utility company serving it a "whipping boy," either to divert political unrest or to attempt to obscure the real problems of a community and its taxpayers.

This is a fact pointed up in the annual report of the Citizens Utilities Company for 1955, which has been published recently under the direction of Richard L. Rosenthal, president of the company. This report claims that the technique, procedure, and method used are easy to explain. Their basic advantage can be seen, because the political adventurers who use them and who are responsible for the difficulties subsequently entailed do not have to pay the expenses incident to them. The taxpayers of the community (who are also the utility consumers) are the ones who do so.

Generally speaking, the Citizens report maintains, the advocates of municipal ownership of a utility property can always find an "engineer" who will write a "feasibility" report proving that municipal acquisition of the utility would be of benefit to the community. It claims that the advocates of municipal ownership and those who seek to bring it into being would not hire the engineer unless they knew in advance that his report would prove their point. Thus, the report maintains, there never is likely to be an objective *pro* and *con* review to the community of municipal acquisition and operation of shareholder-owned utility properties, but, rather, only an outline of the claimed advantages.

Consequently, when these "feasibility" reports are submitted to governmental agencies and, thereafter, their contents widely disseminated through local community media, they are, in effect, "selling jobs" to support the position originally taken by the advocates of municipal acquisition, the report goes on. In other

words, the real test of an honest report might well consist of the presence of a truly objective approach, or some effort to examine both sides of the question—advantages as well as disadvantages.

ACCORDING to the utility company report to its stockholders, the enticing "siren song" of the advocates of municipal ownership is almost always the fact that governmental ownership and operation of utility properties generally obviates the payment of local, state, and federal taxes—both income and property. The "saving" so portrayed is promised to the people, either in the form of rate reduction or as a method of financing other municipal activities, including frequently those which have been deficit ridden. Superficially, the Citizens report warns, this presentation always makes sense. And if the only factors to be considered were those embraced in such "feasibility" reports, at a local level there would be some logic in the proposition, it admits. But it goes on to state that at the real core of the matter is the fact that, almost without exception, the municipal successors to private operators succumb to political operation of the property acquired. As a result, the projected income levels—always based on the efficiency of the shareholder-owned utility operation—do not materialize, because operating expenses increase and operating revenues are adversely affected by poor collection efforts. In short, the report says, the "promised land" of high and tax-free earnings, rarely, if ever, fully materializes.

In addition, the report continues, the very fact that governmental ownership and operation of utility systems relieves these entities of the necessity of payment of taxes has adverse consequences for the citizens of such communities—consequences never portrayed in feasibility reports and rarely perceived in advance. The first of these, it states, is that, generally speaking, quality of service deteriorates. Secondly, by the very nature of things, rarely does the municipal operation husband such annual surplus as it may be able to attain and, thereafter, use the accumulation for the proper purposes of providing replacements for units of property as they wear out or become uneconomic and of financing the additions to facilities which are required as a municipal area expands in population and/or in increase in per customer use of the utility service provided.

THUS, according to the report, when the bond issue sold to finance the municipal acquisition of the shareholder-owned utility's facilities matures, most frequently the municipal system has no cash surplus, the facilities have been allowed to run down, and the funds obtained have been dissipated in many other aspects of municipal activity. Finally, it states, the shimmering "pot of gold," represented by alleged tax advantages, is not what it seems to be.

On this last point, the report declares:

> . . . To the extent that a shareholder-owned utility is taken off the tax rolls, the taxes formerly paid by it must obviously be made up by others. The federal tax consequence is rarely felt directly in local communities—although, obviously, wholesale such acquisitions would necessitate higher federal income tax rates on remaining corporate activities not government owned and on all individual income taxpayers. Even the state consequences of removal of private enterprise from the tax rolls does not seem to be particularly noticeable—because, here again, there are many people over whom the consequent burden of increased taxation is spread. But

the mere fact that the aggregate remainder of society on which municipal acquisition of private activities imposes a material additional tax burden obscures by its size the individual impact of such consequences is no rationalization—except in the most selfish sense—of these inequitable consequences. Essentially, the local advocates of municipal or other governmental taking of shareholder-owned utility facilities are resting on the premise that unknowingly—because in any one isolated instance, the impact on each individual in the rest of society is slight—a large segment of society will carry a very small segment for a free ride. Thus, the fundamental on which government acquisition of private enterprise rests is that a large number will, by very small additional tax payments, subsidize benefits (if realized) to a relative few. There could be no greater inequity—in reasoning or in fact—than the position that because in any individual instance the burden on the many for the benefit of the few is so slight as to be relatively unnoticeable, the very obscurity is "justification"!

THE report adds that quite frequently the advocates of this position lose sight of the fact that the obscurity of slightly higher tax payments imposed on many will not hold true at a local level. Once a shareholder-owned utility goes off the *local* tax rolls, the property taxes it had previously paid community and county or district must be spread over a relatively small population aggregate—and the impact soon becomes extremely noticeable. But, the report points out, its appearance does not take place until *after* the advocates of municipal acquisition have been successful in their sales job. When the remaining taxpayers in these local areas directly and personally feel, through higher individual payments, the disappearance of the shareholder-owned utility from the tax rolls, it is already too late, because the taking has been consummated.

The report re-emphasizes that none of these facts are to be found in the feasibility reports written by promunicipal ownership engineers. It concludes that Citizens Utility Company has therefore deemed it a duty to make them known to the communities it serves whenever the specter of municipal acquisition has appeared to loom large in those areas. Citizens, stockholders, taxpayers, and investors generally, may owe a vote of thanks to President Rosenthal.

Utility and Fish Conservation Experts Work Together

THE problem of the passage of fish up and downstream past hydroelectric projects has often led conservationists, commercial fishermen, sportsmen, and wild-life groups into feverish opposition of the projects themselves.

But in the Pacific Northwest, Portland General Electric Company engineers have been co-operating with fishery biologists, working diligently to solve problems of fish survival raised by the start on the company's Pelton dam project on the Deschutes river in Oregon.

According to a recent article in the Portland *Oregonian,* bylined by staff writer Harold Hughes, co-operation has not yet ended the opposition of the fish commission to the construction of the dam, but it has brought hope that answers may be found which will be satisfactory.

"YOU'RE ATTRACTING ALL THE TOP ENGINEERING GRADS, THISTLEWAITE. WHAT DO YOU USE FOR BAIT?"

Mr. Hughes wrote that the company expects to spend nearly $5,000,000 of the total $25,000,000 cost of the dam in an effort to preserve the fish and the Deschutes so that future fish runs can be built there. A PGE spokesman said about $3,000,000 of this cost would go into a reregulating dam downstream from the Pelton dam to maintain some 100 miles of river water below the dam in its natural condition, so that the fish environment will not be disturbed by stream velocity changes and rises and falls of the river. The dam will, in effect, attempt to "iron out" the river disturbances created by the Pelton project.

The article went on:

> Harlan B. Holmes, biologist for the U. S. Fish and Wildlife Service, who was assigned to advise PGE engineers and to represent the various fishery agencies with the dam designers, also said that PGE dam engineers had been "extremely co-operative."
>
> In fact, PGE put up the money to get advice from the fishery biologists.

Holmes, when informed that PGE expected an agreement on fish passage facilities to be reached soon, said he had seen "no indication that an agreement cannot be reached" between biologists and engineers.

"PGE has sincerely tried to solve the fishery problems," Holmes said.

However, he pointed out that the best answers to the passage of fish past Pelton dam are in the nature of "the lesser evils," that no system devised for the passage of fish past dams is perfect.

This is the reason for the apparently paradoxical situation in which fishery agencies bitterly oppose certain dams and at the same time do all in their power, once the dams are to be built, to design the best possible fishways, Holmes explained.

The hypothesis that an "attractive flow of water" will attract fish out of a reservoir near the surface, thus discouraging fingerlings from sounding and going out through the fatal generator intakes at greater depths, is being applied in an attempt to get the Deschutes fingerlings downstream, Holmes reported.

THIS proposal, unique in dam-fish projects, is also planned for the city of Tacoma's controversial Mayfield dam on the Cowlitz river, according to the article.

At Pelton, Mr. Hughes explained, the penstocks will take water for the turbines at a depth of about 135 feet. The company and fishery experts hypothesize that fingerlings would not go down this deep and would thus escape the death-dealing turbines.

"If this should not work, we will not hesitate to ask the Federal Power Commission to order changes," Mr. Holmes, the U. S. Fish and Wildlife Service biologist, is quoted as saying.

In further explanation of the present planning, the article stated that to get the fish upstream, a 2.78-mile-long fish ladder has been proposed. It would lift the migrants some 185 feet past both dams and is designed with near-level stretches for "resting" of the fish. Biologists have not determined the type of barrier best suited to guide the upstream migrants into the ladder. Many other details of the fish passage are still in the experimental stages.

ACCORDING to the article, the "fishery people" would like to see the detailed designs delayed until next year so that advantage could be taken of experiments now going on at the University of Washington School of Fisheries at various Northwest dams.

It said that this would not hold up the construction of the dam, if basic ideas can be agreed upon. Assuming the fishery people get all they ask at Pelton, how efficient will the fish passageway be? the article writer asked the fishery biologist. The answer was that the biologists may never quite know what effect on fish populations the fish passageways have had. But at any rate, work on PGE's main Pelton dam has begun.

"IF the strides made in the last ten years are continued through the next ten years, we shall see a vast expansion in consumer buying and a much better level of living during the coming decade."
—HOLGAR J. JOHNSON,
President, Institute of Life Insurance.

The March of Events

NARUC Convention Plans

THE NARUC Executive Committee has announced the business program and the proposed order of business and procedure for the forthcoming annual convention to be held in San Francisco, California, on July 24-27, 1956. The Sheraton-Palace hotel has been selected as the convention headquarters.

The opening session of the convention will begin at 2 P.M. Tuesday afternoon, July 24th. The Wednesday morning business session will be held at 10 A.M. and there will be no business session Wednesday afternoon. At this time members will be free to partake of the entertainment available in San Francisco. The Thursday morning session will begin at 10 A.M. and the afternoon session at 2 P.M. The Friday morning session will begin at 9:30 A.M. The annual banquet will be Thursday evening, July 26th, in the Garden Court of the Sheraton-Palace hotel. Copies of the "Official Call" and the advance business program will be distributed to member commissions in the near future.

The topics for discussion and addresses to be given are as follows: the president's address by the Honorable Benjamin F. Feinberg of New York; report of the Washington office by General Solicitor Austin L. Roberts, Jr.; a discussion on nuclear energy in the electric industry; a discussion of "regulatory protection of consumers"; an address by the Honorable Howard G. Freas of the Interstate Commerce Commission on "State and Federal Co-operation in Transportation Regulation"; and a round-table discussion of "Cost of Capital as Related to Rate of Return." Speakers for the topics for discussion will be announced as soon as commitments are received, it was said.

The Hawaii commission, joined by Governor King of Hawaii and Mayor Blaisdell of Honolulu, has issued a cordial invitation to all members and friends of the association to come to Hawaii following the July convention in San Francisco. The commission is sponsoring and has organized a postconvention tour that promises a real "Aloha" Hawaiian holiday for those who desire to visit these beautiful islands.

The NARUC convention in San Francisco will close on Friday, July 27th. The Hawaii tour plans for departure from San Francisco via United Airlines or Pan American Airways on Friday evening or Saturday morning with a typical Hawaiian welcome and reception upon arrival. On Saturday evening, there will be a cocktail party and banquet with Hawaiian music and entertainment. Sunday, July 29th, will be a leisure day to enjoy Waikiki Beach with catamaran, Hawaiian

sailboat and outrigger canal riding, swimming and surfboard riding; and a concert in the afternoon by the world famous Royal Hawaiian band in beautiful Kapiolani Park.

On Monday evening there will be a reception by the governor of Hawaii at his official mansion, Washington Place.

Court Authorizes Gas Hookup

THE U. S. court of appeals recently affirmed a government order authorizing a natural gas hookup for the South Carolina Generating Company's plant near Augusta, Georgia. The link will permit use of natural gas instead of coal as the basic boiler fuel for generating electricity. A large segment of the power goes to the Atomic Energy Commission's Savannah river project.

The gas will be supplied by the Southern Natural Gas Company. Coal-carrying railroads, the Association of Coal Producers, the United Mine Workers, and other coal interests contested the authorization.

Illinois

Taxes on Utilities' Coal Under Attack

NEARLY $3,000,000 in state sales taxes on coal sold to Illinois utilities is involved in a test case recently reported headed for the state supreme court. Appeal to the high state court is being taken from a ruling by Circuit Judge DeWitt Crow, who in Springfield last month dismissed the test suit brought by the Farrand Coal Company, of Riverton, against state revenue officials.

Although dismissing the complaint for lack of equity, Judge Crow issued a temporary injunction to prohibit the state from moving an estimated $2,800,000 from the state protest fund, pending an appeal of his ruling to the supreme court.

The state revenue department estimates that about $1,000,000 annually is collected in state sales taxes on coal sold by mines to utility firms. The suit contended that such sales are not retail, since the coal is not consumed by the utilities but merely converted to energy and resold. It was argued that the utilities were buying the energy in the coal and reselling it. Since the utilities pay a 3 per cent tax on their gross receipts from the sales of energy, the suit contended the companies were carrying a double burden.

Nebraska

Rurals Asked to Loan Funds

NEBRASKA's rural power districts recently were asked to loan money from their surplus funds to keep construction of badly needed electrical facilities going in the state.

The Central Nebraska Public Power and Irrigation District and the Nebraska Public Power System have asked the loans from the rurals as a last-ditch effort to cover immediate costs of projects under way.

The decision of the Rural Electrification Administration to withhold loans to the two agencies made this device necessary, officials explained. The REA announced recently it would not loan money to the Nebraska groups until the state power squabble is settled in court. The state supreme court has under consideration a motion for a rehearing of the complex power suit. If granted, the matter probably would not be taken up by the court until fall. The REA loan would be delayed until that time.

New York

Residential Gas Rates Reduced

THE state public service commission recently accepted tariff amendments filed by New York & Richmond Gas Company and Kings County Lighting Company designed to reduce basic residential gas rates in their respective higher consumption brackets by an estimated $118,169 annually, effective June 1st.

Under the new tariffs, an estimated 12,285 residential customers of New York & Richmond Gas Company will enjoy reductions aggregating $65,578 and 5,017 residential customers of Kings County Lighting will save $52,591. Beneficiaries of the rate reductions will be limited primarily to those who use gas for space-heating purposes, although some reductions may be enjoyed by those using gas for water-heating purposes.

The New York & Richmond tariff reductions will apply to customers using more than 1,500 cubic feet monthly, while the Kings County reductions apply to consumption in excess of 5,000 cubic feet monthly.

Oregon

PGE Stands Firm on Pelton Rights

DESPITE the opinion of Oregon's attorney general that it is proceeding illegally in constructing Pelton dam, Portland General Electric Company was recently reported going ahead with the project.

A statement from the company said PGE is relying on the opinion of its own general counsel that its action is lawful and that Attorney General Robert Y. Thornton, in his conflicting opinion, is wrong. Thornton, in answering an inquiry by Governor Elmo Smith, gave a written opinion which concluded:

> Until otherwise decided by the supreme court of Oregon, I must advise you that the Portland General Electric Company is violating the water laws of the state of Oregon by constructing the hydroelectric project at the Pelton site of the Deschutes river.

Thornton's opinion was based on the theory that a federal construction permit such as PGE has for the project, does not override the Oregon law that forbids appropriation of water without a permit from the state hydroelectric commission. This the company has sought but does not have, it was said.

Tennessee

TVA Chairman Target of Political Attack

GOVERNMENT power lobbies, stung by TVA Chairman Herbert D. Vogel's charge that they have been "playing politics," retaliated in the form of a demand for "investigation" of the TVA chairman, at their recent meeting in Gatlinburg, Tennessee.

Nine officials of Citizens for TVA, Inc., the chief spokesman for the government power lobby in the TVA area, and States' Rights Finley, superintendent of the Chattanooga Power Board, adopted a resolution at Gatlinburg in which they urged Congress to investigate Chairman Vogel, claiming that he has failed to live up to the oath he took to support the principles of the TVA law.

That the chairman's forthright statement to the forty directors of Citizens for TVA, at Huntsville, Alabama, last November 10th, had piqued this group through the months was indicated by Herbert Bingham of Nashville, secretary of the Tennessee Municipal League and a director of the Citizens. He was present at the Gatlinburg meeting. Bingham described the resolution as a "deliberate, sustained, and carefully considered policy of Citizens for TVA" which was first considered and discussed at the Huntsville meeting.

The organization of Citizens for TVA is predominantly Democrat. Chairman Vogel is the first appointee to the TVA board made by a Republican national administration. He has been under almost constant partisan fire since taking the post, from Governor Frank G. Clement, the government power lobbying groups, and Senator Albert Gore.

Chairman Vogel described the latest attack as "obviously a political maneuver. It is the same old game that has been played so many times. When a real issue is lacking TVA is made to appear to be in danger, and the champions rise to take arms against a phantom threat."

At the Tennessee Municipal League meeting at Gatlinburg Governor Clement charged that Chairman Vogel had violated his oath of office, thus setting the stage for the later action by the representatives of the public power groups a day later.

Vermont

Governor Cites Power Grid Need

NEED for immediate construction of a new power grid system has been cited by Governor Johnson as a vital step in meeting Vermont's future power needs.

He told a press conference last month that it would be impossible to handle St. Lawrence river power within Vermont without a comprehensive new system for distribution. Not only is such a new system necessary, he said, but now is the time to build it. The governor predicted that Vermont's power requirements, which he estimated presently are 150,000 kilowatts, will triple in the next twenty years.

"By that time," he said, "we certainly will need a better over-all distribution system for power."

Albert A. Cree of Rutland, president of the Central Vermont Public Service Corporation, has been quoted as estimating that a new grid system for handling St. Lawrence power will cost anywhere from $10,000,000 to $15,000,000.

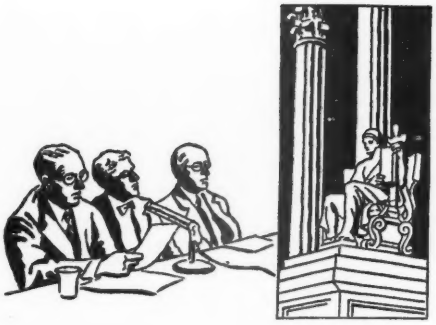
Wisconsin

Electric Rate Reduction Announced

A REDUCTION of an estimated $200,000 annually in electric rates for urban residential service was announced recently by Harold P. Taylor, president of Wisconsin Public Service Corporation. The reduction will be effective on bills received after June 4th.

"Every urban residential electric customer will benefit in a small way, because the reduction will apply to the first step in the rate," Taylor stated. "The size of the individual reduction will vary with the largest cut amounting to a maximum of $3 per customer per year."

This is the second rate reduction to urban users of residential electric service in the past four years. Rates to this class of customer were also reduced by $120,000 annually in August, 1952.



Progress of Regulation

Trends and Topics

Plant Construction under Zoning Ordinances

ZONING-CONSCIOUS cities, towns, and villages imposing restrictions on the use of private land have often failed to distinguish between utilities, such as electric companies, and ordinary industries. The rapid expansion of suburban areas has, as a result, presented a relatively new problem for companies impressed with the obligation to serve the public. The problem has been discussed in PUBLIC UTILITIES FORTNIGHTLY in the issues of March 3, 1955, at page 252, and August 18, 1955, at page 231. A decision by the Connecticut commission on zoning is reviewed in this issue of the FORTNIGHTLY at page 867 (Re Serbin, involving The Hartford Electric Light Co.).

A recent decision by the Pennsylvania superior court involving the Philadelphia Electric Company (12 PUR3d 477) recognizes the need for public utility expansion unhindered by local zoning restrictions. A township objecting to the proposed location of a substation control building was unable to persuade the court to overrule a commission order authorizing its construction. While first-class townships have power to zone with respect to the buildings of a public utility company, subject to a determination by the commission as to necessity, they do not have power either express or implied to regulate utilities with respect to uses and structures other than buildings. The court referred to the decision in the Duquesne Light Company Case (4 PUR3d 358). There an injunction was issued against the enforcement of a zoning ordinance as applied to an electric company. The court decided that a first-class township has no power to regulate a public utility by zoning ordinance since the legislature has committed the regulation of utilities to the public utility commission.

The township, in the Philadelphia Electric Company Case (12 PUR3d 477), contended that the commission considered only the consuming public and disregarded the interest of the people of the municipality. It further contended that the commission should have considered the question of reasonable necessity, "with reference to the facilities of the substation as well as the building." The court said that the voluntary expansion or extension of facilities lies in the

discretion of company management and it is not within the province of the commission to interfere unless an abuse of discretion or arbitrary action by the utility is shown. The substation was urgently needed to provide adequate and reliable electric service in the load area. Its location was dictated by considerations which, in the commission's judgment, management had justifiably found controlling.

The Duquesne Light Company Case first went into court when a preliminary injunction was granted against town interference with the construction of a transmission line (3 PUR3d 44). A lower court took the position that the town had no right to regulate public utilities. The commission had authorized construction and the zoning ordinance could not stand in the way of this necessary power line. The state supreme court approved that principle (4 PUR3d 358).

Exemption by Commission Order

A Massachusetts law provides that a building, structure, or land used or to be used by a public service corporation may be exempted from the operation of a zoning ordinance if, upon petition by the corporation, the commission decides that the structure is reasonably necessary. Such a decision by the commission exempting a parcel of land to be used by a gas utility was upheld in court (10 PUR3d 248). The court also said that the company could petition for exemption even if it had no power of eminent domain and had to buy its land as best it could.

It was immaterial whether the location had been acquired by eminent domain or by purchase.

No Absolute Prohibition

A New York court ordered the issuance of a permit for the erection and maintenance of a high-tension overhead electric transmission line through a residential district after the municipality had denied a permit (11 PUR3d 46). The court said that a municipal zoning ordinance is invalid in so far as it absolutely prohibits an electric company from constructing and maintaining such a line through a village, in view of the company's legal duty to furnish and provide adequate and reasonable service. Such an ordinance restriction, in the opinion of the court, violates the due process and equal protection clauses of the federal and state constitutions. Moreover, the court held, the availability of another route was not properly in issue. It was said to be the duty of the company to lay out lines, and its discretionary powers could not be questioned by local authorities and were not subject to court supervision if the company acted in good faith and in accordance with valid regulations.

Review of Current Cases

Merger of Subsidiary Electric Utility Companies Permitted under Holding Company Act

THE Securities and Exchange Commission modified its previous order requiring General Public Utilities Corporation, a holding company, to dispose of its interests in Northern Pennsylvania Power Company, a subsidiary electric company. It found that the conditions upon which its divestment order had been predicated no longer exist and that the company could be retained as part of the holding company's integrated electric utility system. The commission also approved the proposed merger of the subsidiary into an affiliated electric utility subsidiary which would acquire all of its assets and assume all of its liabilities.

At the time of the original order the subsidiary's properties were not physically interconnected with any of the properties of the holding company system. North Penn had no substantial generating facilities of its own and was almost wholly dependent for its supply of power upon a contract with a company which was then a nonaffiliated company. Subsequently, however, it developed that the company's properties were capable of physical interconnection with the integrated system. In fact, it was found that the interconnection between the subsidiary and the system properties would result in substantial economies to the holding company system.

The commission found that the inclusion of North Penn's properties within the holding company system would produce only a minor increase in the factors relating to the operating characteristics of the system. The properties were all located within the state of Pennsylvania, where the preponderance of the existing system was located. Furthermore, the commission did not regard the size of the area served by the proposed system to be so large as to be beyond that permitted by the standards of the act.

The properties of the existing system would, upon merger with the subsidiary company, be operated as a division of the integrated system. The construction requirements would be co-ordinated with those of the other operating divisions. On the other hand, localized management of the properties would be preserved by decentralizing so far as feasible the solution of local problems and matters involving relations with consumers. The effectiveness of regulation of the existing system would not be impaired by the merger.

Consequently, the commission held that the electric properties of North Penn might appropriately be considered as part of the holding company's single integrated electric utility system, and that the merger should be approved. *Re General Public Utilities Corp. File Nos. 59-32, 70-3050, Release No. 13116, March 2, 1956.*

Zoning Board's Approval of Electric Company Substation Site Affirmed by Commission

AGGRIEVED residents appealed to the Connecticut commission after a town zoning board had approved a substation site selected by The Hartford Electric Light Co. The state commission, in affirming the board's decision, stated that it

must deal with the matter as one of public utility regulation rather than zoning. The guide was what was reasonably necessary in the public interest.

The residents had contended that the company had not fully explored the feasibility of using other sites that would comply with its needs for a substation in the area. The availability of other sites, and the efforts made to secure them, in so far as they are pertinent at all, said the commission, are merely matters of fact bearing upon the main question of whether the proposed site, all things taken into account, is reasonably necessary for the convenience or welfare of the public.

The commission believed that the land contour at the proposed site more readily lent itself to effective screening of the installation by landscaping. There was no persuasive evidence of serious effect upon the market value of near-by properties. Two years after the installation of the substation, the testimony indicated, it would be virtually obscured by the growth of plantings designed to accomplish the screening. There would be only occasional trips to the site by service personnel. No overhead wires would lead to the installation. Although the matter at hand involved merely the location of a substation, and not the power of eminent domain, the commission pointed out that credence must be given to the good faith and exercise of discretion by the company's management in the selection of the site. The company had based its selection upon sound engineering considerations, with due regard for public convenience and necessity, public health, safety and welfare, and the stabilization of property values.

The commission could not lose sight of the fact that use of another location might only result in substitution of the names of objectors rather than entirely eliminate objection. Human nature being what it is, persons might say the installation would satisfy a public need but that it should be constructed in some other neighborhood. *Re Serbin, Docket No. 9248, April 3, 1956.*

Electric Lines under City Streets Require Municipal Franchise

THE court of civil appeals of Texas affirmed a judgment in so far as it restrained an unfranchised electric company from furnishing service within the corporate limits of a city through distribution lines under the city's streets. The judgment was reversed, however, in so far as it enjoined the company from serving city customers through lines which did not cross over, under, or encroach in any way upon the streets.

The company served some of the city customers through lines reaching their premises by tunneling under the streets. Others were served by service connections beyond the city limits through lines which were located entirely upon private property.

Franchise Requirements

The company claimed that although its franchise had expired it had the right to serve city customers not only through lines located on private property but also by tunneling under the city streets in such a way as not to disturb the surface. It argued that this tunneling process did not constitute a use of such streets.

The court pointed out that a franchise

is a right or privilege granted to a company to do things which it otherwise could not do, such as operate electric lines, either above or beneath the surface of the streets. Cities have exclusive statutory control over their streets and public grounds. In view of this, the court said, electric companies may construct, maintain, and operate lines over city streets only with the consent and under the direction of the city.

Underground Line Construction

The court agreed with the lower court that the construction and maintenance of distribution lines under the streets constitute a use of the streets as contemplated in the statutes giving cities power to control their streets and alleys. It held, therefore, that the company, in the absence of a franchise, had no right to serve city customers by tunneling under the streets.

On the other hand, the court believed that the lower court was wrong in enjoining service involving the lines which did not cross over or under the streets. It said that the municipal power to regulate public utilities is predicated upon the statutory power to control the use of streets. The electric company's right to sell electricity was not dependent upon a municipal franchise. Only its right to use the streets in the operation of its business was dependent upon that. *West Texas Utilities Co. v. City of Baird, 286 SW2d 185.*

FCC Refuses to Change Accounting Rules Applicable To Contributions and Dues

REPRESENTATIVES of the telephone industry were unsuccessful in persuading the Federal Communications Commission to revise the Uniform System of Accounts so far as they relate to contributions to, and membership fees and dues in, organizations engaged in activities beneficial to the community. The proposal was for a charge to operating expense account, "Other Expenses" (Account 675), or to the appropriate operating departmental expense accounts, if directly related thereto, rather than to the below-the-line account, "Miscellaneous Income Charges" (Account 323), as currently required.

The commission, in releasing a notice of the proposed rule making had also invited interested parties to present their views concerning (a) inclusion of such costs in a specially designed operating expense account or in Account 675, "Other Expenses," thereby eliminating the use of departmental expense accounts as proposed by the industry, (b) the question whether charitable contributions, if charged to operating expenses, should be limited in amount or type by the accounting rules, (c) whether a tax normalization rule should be adopted. The commission disapproved all of the proposals.

Accounting rules, said the commission, should facilitate expeditious rate proceedings in so far as possible and should not impose upon the commission, to the possible detriment of ratepayers, the burden of ferreting out doubtful or improper items from the accounts. In view of the controversy concerning the rate-making treatment of community welfare expenditures, amendment of the accounting rules to permit the charging of such expenditures to any of the operating expense accounts, said the commission, might indicate to interested parties that the commission leaned toward allowing such

expenditures as operating expense for rate making. The commission said it did not intend by its opinion on the accounting questions to set forth any opinion concerning the rate-making aspects of the items at issue.

It was considered unwise to adopt a proposed tax normalization rule under which charitable contributions would continue to be charged to Account 323, but an amount equal to the income tax reduction attributable to such contributions would be credited to Account 323 with an offsetting charge to operating expenses. The commission said that even if it assumed tax normalization accounting to be desirable in principle, it had doubts whether such accounting should be applied in the case of charitable contributions by the telephone companies. Annual contributions are relatively uniform and not of such magnitude as to produce tax reductions which could distort net operating income to any appreciable extent. Tax normalization accounting is usually applied to extraordinary nonrecurring transactions which are of sufficient magnitude to result in such distortion. Tax normalization accounting for contributions would complicate the accounts and might confuse some readers.

Three commissioners dissented from the majority decision. *Re Amendments of Part 31 of the Commission's Rules and Regulations, Docket No. 11402, April 4, 1956.*

Substandard Telephone Service Must Be Improved

INVESTIGATING on its own motion the service rendered by the Elyria Telephone Company, the Ohio commission ordered the company to carry out its plans for construction of a new central exchange building with new equipment and to improve toll service which was found to be much below minimum requirements.

The central exchange equipment was found to be inadequate to enable the company to provide local service of the standard normally required. It appeared, however, that the company had already promised subscribers that it would construct and shortly have in operation a new central exchange. In view of this circumstance, the commission did not think it advisable to order expensive improvements in the existing equipment.

While toll calls were generally completed within the minimum requirement of ten minutes, the answering service on such calls was below the minimum requirement of ten seconds. This minimum, the commission pointed out, is not intended to be a standard or norm of good service, nor does it even give a company "a clean bill of health." The minimum service requirement, as the word indicates, is the lowest grade of service that will be tolerated.

Evidence indicated that the management had been "rude and arbitrary" in handling complaints by subscribers. The company was ordered to modify its policies in this respect in order to be sensitive to subscriber dissatisfaction and to discharge its duties to the public.

Sufficiency of Notice

The company complained of insufficient notice with respect to service conditions investigated by the commission after the original complaint in this case was instituted, since the final determinations upon both the complaint and the subsequent conditions were incorporated in a single order. Citing a statute requiring notice of hearing to be given the public by publication, the

company contended that a second complaint and notice should have been instituted and that two orders covering the two inquiries should have been made.

The commission pointed out that the company had been given ample notice of the subsequent conditions investigated and had been afforded ample opportunity to rebut evidence relating to such conditions. It could not, therefore, complain of surprise. Nor could it assert in this instance a statute intended to insure notice to the public. *Re Elyria Teleph. Co. No. 25,253, March 20, 1956.*

CAB's Interpretation of Order Controls

THE United States court of appeals affirmed the CAB's refusal to direct a surviving air carrier to pay claims of former flight engineers of a merged carrier for monetary compensation. The claims arose from alleged violations of the board's interim order, which required integration of the flight engineers of the merged and surviving air carriers into the seniority list of the surviving carrier, and which directed that promotion subsequent to the merger be made on a ratio basis.

The court held that the board's interpretation of its interim order, that it had not intended to provide compensation enforceable by the board for failure to promote, was controlling. Such interpretation accorded with the literal language of the order and was not unreasonable, and was made by the agency which had entered the order. *Chorbajian v. Civil Aeronautics Board, 229 F2d 81.*

Electric Rates Increased on Average Investment Rate Base after Cost-of-service Allocations

INCREASED rates filed by the Manufacturers Light & Heat Company to offset rising costs were ordered by the West Virginia commission to be canceled as excessive. Somewhat lower rates, sufficient to provide a rate of return of 6¼ per cent on an average net investment rate base, were authorized instead. Authorization of rates which will likely produce revenues sufficient to meet increased costs, it was noted, is mandatory upon the commission.

The rate base was computed by taking the average of the beginning and end balances of the company's capital account for the test year and adding to the amount thus obtained allowances for materials and supplies and cash working capital. Since the commission classification of accounts provides for the addition of interest to the cost of construction up to the time the property is put in use, an item representing construction not yet in operation was disallowed.

The company, which serves nearly 47,000 customers in West Virginia, also operates in other states. In order to determine an allowable return from the West Virginia operations, it was necessary to allocate property and costs.

Commodity and Demand Allocations

The company based its cost-of-service study on the premise that the cost of service should be assigned to the West Virginia customers in proportion to the ratio between the volume of gas they consumed and the volume consumed by all the cus-

tomers of the system. Using the consumption during the whole test period, a commodity factor was produced. In determining a demand factor, the company proposed to use a particular day, January 12, 1954, when the temperature at Pittsburgh was 13 degrees above zero, and allocate its property according to the quantity of gas which it assumed was used by West Virginia consumers on that day as compared to the volume consumed in the entire system on the same day. In accordance with these territorial allocations, it would further allocate the cost of service in West Virginia between the several classes of customers; *i.e.*, domestic, commercial, industrial, and other customers.

Since meters were read monthly, but on different dates of the month, no accurate determination of the volume of gas used monthly—much less daily—could be made. The best monthly calculation would be shown in the monthly billings, though they would seldom be for gas consumed in a calendar month. Because of obvious variables, consumption on a particular day could not be estimated with any reasonable accuracy.

The company's assumption that the mean temperature at Pittsburgh on January 12, 1954, was the same throughout the entire territory was deemed untenable since it is common knowledge that temperatures vary materially even within small areas. It was observed, moreover, that an allocation of cost of service between industrial and other classes of customers could not be made on the basis of their consumption on a particular day at a particular temperature, in view of the interruptible character of the company's industrial service. Had it been cold enough on January 12, 1954, to necessitate suspension of industrial service, no cost at all would then be allocated to the industrial users, an unacceptable result.

The commission did, however, rather unwillingly approve the use of a peak month in the cost-of-service studies, but it pointed out that actually no peak or demand should be considered since the company purchased nearly all of its gas supply at 100 per cent load factor, storing gas during the summer months for winter use. Such gas becomes a commodity, the commission said, and should be treated as such.

High- and Low-cost Gas Allocation

In view of the availability of southwestern gas for West Virginia consumers, the commission ruled against the allocation of any part of higher-cost gas purchased in eastern Pennsylvania. Similarly, pending necessary studies, it required the company, at the earliest practicable date, to give its West Virginia customers the benefit of certain low-cost purchases instead of the customers of its affiliates. "Charity," said the commission, "should begin at home."

Block Rates Affecting Industrials

In designing the block rates which were authorized, the commission gave consideration to the unusual quantities of gas consumed by the company's industrial customers. But the rates were not designed to take care of contingencies, such as interruptions in service, or to compensate customers for the cost incurred in maintaining stand-by equipment for use in the event of interruption of gas service. It would be discriminatory, said the commission, to maintain a separate rate schedule for industrial customers, since any utility service used by them might occasionally have to be curtailed. *Re Manufacturers Light & Heat Co. Case No. 4241, April 4, 1956.*

State Commission Asserts Jurisdiction over Railroad Drinking Water Dispute

JURISDICTION of the Ohio commission to require a railroad company to provide adequate drinking water facilities on engines operating within the state was called in question by the railroad. It was contended that the Railway Labor Act exclusively controlled the facts in the case and required the parties to negotiate. Although negotiations had been instituted, the matter was put before the commission upon complaint by a "co-operative legislative committee" of the railroad brotherhoods. Citing statutory authority, the commission asserted jurisdiction.

The company further objected that the committee which filed the complaint was not a proper party to bring the proceeding and that the regulatory commission therefore lacked jurisdiction. Overruling the objection, the commission decided that the committee was a real party in interest and a proper party to complain.

The commission found that drinking water facilities supplied by the company for workmen's use constituted a danger and a hazard to their health, safety, and welfare. The condition was ordered to be eliminated by replacing the existing equipment with clean and adequate facilities. *Co-operative Legislative Committee of Transportation Brotherhoods v. Wabash R. Co. No. 25047, February 10, 1956.*

Carrier's Colorable Interstate Commerce Held Attempt to Circumvent State Commission

THE Maryland court of appeals upheld the commission's findings that a certificate of public convenience and necessity which had been issued by the Interstate Commerce Commission to a carrier to transport freight in interstate commerce between a point in Maryland and a point in another state or the District of Columbia did not authorize the carrier to transport between points in Maryland by a merely colorable interstate route. The court would not interfere with the state commission's jurisdiction to order the carrier to cease such transportation.

Whether a carrier's transportation of intrastate freight over an indirect route is bona fide interstate commerce or merely a subterfuge to avoid the state commission's jurisdiction, said the court, is primarily an administrative question to be determined by the commission. The solution of the problem depends upon the places of origin and destination and whether the routes are necessary and reasonable.

Every final decision, order, rule, or regulation of the commission is *prima facie* correct and would not be disturbed unless clearly shown to be in violation of constitutional provisions, or not within the statutory authority or jurisdiction of the commission, or made upon unlawful procedure, or arbitrary or capricious, or affected by other error of law, or if the subject of review is an order entered in a contested case and is supported by substantial evidence on the record considered as a whole. The burden of proof rested upon the carrier to show by clear and satisfactory evidence that the commission order was unlawful or unreasonable. The commission had found that the carrier should not be allowed to convert intrastate commerce into interstate commerce by merely crossing the state line. The court was satis-

fied that the evidence was sufficient to support the finding that the carrier's transportation was not bona fide interstate commerce, but that the indirect route across the district line was merely a subterfuge to circumvent the jurisdiction of the commission.

The commission, however, had no right to prevent the carrier from engaging in any bona fide interstate commerce, only to determine if the alleged interstate commerce was indeed intrastate commerce.

Existing Carriers Furnishing Adequate Service

The commission had also denied the carrier's request for a permit, finding that existing service was adequate and satisfactory. The court pointed out that, while it was entirely true the commission had an obligation to protect a common carrier against competition in order to conserve existing investments, this obligation was secondary to the commission's securing adequate and permanent service for the public at the least possible cost.

Competition, said the court, is a legislative, not a judicial, question, unless the decision of the administrative body is shown to be arbitrary or unreasonable. The court would not say that the commission should have authorized competition when the commission had found adequate service. *Clark (Baltimore-Washington Express Co.) v. Maryland Pub. Service Commission, 120 A2d 363.*

Water Service Conditioned upon Revenue Guaranty

WATER service was ordered by the Connecticut commission to be furnished to a prospective customer on condition that he guarantee annual revenue of 12½ per cent of the cost of a water main extension which would have to be constructed in order to furnish the service. It was not contemplated that any other customers would be served from the extension in the foreseeable future.

The commission regarded the 12½ per cent rate, required under company rules, as no more than enough to afford a reasonable return on the construction investment after the payment of taxes, depreciation, and all operating and maintenance expenses associated with the extension. Since the cost of the extension was estimated to be over $5,000, the amount of the customer guaranty was computed at $675 annually.

Considering the magnitude of this guaranty, the commission ordered as a condition of service that the customer make an advance in aid of construction of substantially the entire construction cost without interest. Service would be furnished at standard rates. Under the order, however, future customers would be required to share pro rata in the extension prepayment. *Berio v. New Haven Water Co. Docket No. 9233, March 16, 1956.*

Court Upholds FPC Control over Direct Sales Of Interruptible Gas

A UNITED STATES court of appeals, sustaining several Federal Power Commission orders challenged by Panhandle Eastern Pipe Line Company, ruled that, while the commission does not have jurisdiction over direct sales of natural gas to

a consumer as such, it does have a duty to prevent the use of facilities subject to its jurisdiction, for purposes which will impair a natural gas company's ability to provide adequate and reasonable service to existing customers. If acceptance by a pipeline of a new direct consumer would seriously impair existing service, the commission may refuse a certificate to transport gas under the Natural Gas Act. Its control over transportation is completely independent of the sale of gas.

The commission can issue a certificate only when public convenience and necessity require it, and the administrative decision must be made before the gas passes through the pipeline, irrespective of whether it will eventually be sold directly or for resale. Since the facilities over which Congress gave the commission control are limited, said the court, new services must be subject to the commission's authority if that authority is to be effective. Otherwise the agency would be unable to enforce the provisions of § 4(b) of the act proscribing undue preference and rate discrimination.

The intent of the orders appealed from, the court noted, was that the resale buyers, who sustain most of the cost of construction and maintenance of the transportation facilities, are entitled to a reasonable amount of such interruptible gas as the company may have. It cannot appropriate all of the excess for direct sale. The commission did not attempt, however, to fix a rate at which the gas which it allocated for direct sale may be sold. That is within the province of the state regulatory bodies, it was indicated, but they in turn have no authority to interfere with the federal commission's allocations.

Ineffectual Filing of Tariff Changes

An interesting procedural question was raised by Panhandle. The company sought and was granted authority to transport an increased amount of gas, though, as a condition, it was required to include in a prescribed form of tariff certain interruptible schedules which had been ordered to be filed after an adversary hearing, the order not being appealed. Later, pursuant to the provisions of § 4(d), Panhandle filed tariff changes intended to cancel the interruptible schedules. The commission did not disapprove the changes within the five months' suspension period provided in § 4(e). Upon these facts Panhandle argued that the revised tariff became effective and the interruptible schedules were canceled.

The court disagreed. It ruled that § 4(d) could not thus be availed of to unilaterally nullify the order which was entered only after an adversary hearing and under which the company had been proceeding since its issuance. Section 4(d) merely provides an alternative method of effecting changes that are otherwise permissible under the act. *Panhandle Eastern Pipe Line Co. v. Federal Power Commission, No. 11,510, April 27, 1956.*

Depreciation Reserve Deficiency Amortized in Restatement of Account

NEW YORK & RICHMOND GAS COMPANY, whose property accounts were long ago established on an original cost basis, was authorized by the New York commission to restate its book depreciation reserve reasonably to reflect the accrued depreciation existing in the property. The company's petition appeared to

be in substantial conformity with previous depreciation studies of the commission staff, and the proceeding was disposed of without hearing.

The deficiency in the reserve account, said the commission, should be shown as a debit balance in a separate subdivision of the depreciation reserve. This balance, as the company proposed, was permitted to be amortized over a period of five years. By this means the primary depreciation expense and the depreciation reserve accounts would record currently the depreciation accruing and the accrued depreciation existing in the property, and the special subdivisions of the accounts would show the amortization of the deficiency and the unamortized balance of the deficiency. The commission indicated, however, that the amortization charges to depreciation expense could not be considered as operating charges in any determination of rates. *Re New York & Richmond Gas Co. Case 16613, April 2, 1956.*

Telephone Rates Increased to Attain Uniformity Among Comparable Exchanges

CONTROLLING consideration may properly be given to uniformity of rates among comparable telephone exchange groups, the Connecticut commission stated, in passing upon a proposed rate increase for the two exchange groups of the New York Telephone Company operating in Connecticut. By reason of a substantial growth in telephone service since 1948, the two exchanges had advanced in number of connected telephones from one group classification to the next higher group. The various groups of the company have different rates in force, and the increased rates sought in this case were those in effect in the balance of the company's system for similarly classified groups. The commission indicated that to establish rates for the Connecticut exchange groups different than the rates charged for comparable groups of the company operating in New York would be to place an unrealistic and unjustifiable emphasis on the accident of a political boundary separating the Connecticut operations from the New York service. Since the proposed uniform rates were found to be no more than reasonable, they were approved. *Re New York Teleph. Co. Docket No. 9288, April 19, 1956.*

Operating Ratio Theory Adopted in Transit Rate Proceeding In Lieu of Abandoned Rate Base Approach

IN a rate proceeding brought by the Louisville Transit Company, the Kentucky motor transportation department abandoned the rate-base approach to rate making for transit companies and adopted the operating ratio theory as "the standard best suited for determining just and reasonable earnings in urban transit rate proceedings."

A previous order in this case prescribing rates computed on a rate base was reversed upon review by a state circuit court and remanded for further proceedings. The court specifically condemned the rate-base formula, asserting that it failed to recognize such factors as declining passenger traffic, rising costs of operation, and short-term fluctuations in the value of

rapidly depreciating transportation equipment.

The opinion set forth the principles which must be applied in determining the amount of revenue allowable to a transit company.

Revenue Requirement

In light of the legislature's declaration of policy, the court indicated, the "just and reasonable" rate required by statute must, as a minimum, permit the company to earn revenues sufficient to pay its operating expenses, meet its depreciation requirements, preserve its financial standing, and pay investors a return adequate to attract capital necessary to maintain efficient service. Investors in transit companies must have a profit commensurate with the risk involved. This is necessary in order to induce them to provide capital.

The ultimate question which the department must determine, said the court, is how many dollars a year the company must earn, after taxes, in order efficiently to serve the public. The theory underlying the determination is immaterial so long as the amount of revenue allowed is adequate, taking into account the special economic conditions which confront transit companies—*i.e.*, increasing competition, a continuing decline in passengers, and a continuing increase in costs.

Interpretation of Federal Act

Under a Kentucky statute the department is required to apply, as far as practicable, the administrative and judicial interpretations of the Federal Motor Carrier Act.

In administering this act the Interstate Commerce Commission has employed the operating ratio theory in fixing rates for motor carriers, in view of the peculiar risks and types of property involved in motor transportation, and recognizing that the chief concern of motor carriers is operating expenses rather than returns on large capital investments. That agency has fixed an operating ratio of 90 per cent as a basis for rates in a number of cases.

Applying all these principles as prescribed by the court, the department determined that an operating ratio of 92 per cent would be a proper rate basis for the Louisville Transit Company and accordingly ordered new and higher rates. The department observed, however, that a fair operating ratio may vary among different companies. *Re Louisville Transit Co. Docket No. 1378, April 17, 1956.*

Complaint against High Rates Dismissed

NUMEROUS informal complaints lodged against a water company were dismissed by the New Jersey commission with a request that the company attempt to reach an amicable adjustment with some of the irate customers. The complaints arose from an experimental rate plan put in operation by the company until the commission could make a more complete evaluation of its effect, and the return that the company should receive. The company was in the process of converting the entire system to a metered plan and had formerly billed its customers on a flat-rate basis.

While some customers experienced unusually high bills, particularly in the first quarter of operation under metered service, commented the commission, that did not indicate that the rates charged were too high. The general over-all effect of the rates upon the revenues of the com-

pany was the determinative factor.

There had been instances of extraordinarily high consumption of water during the first quarter under the meter-rate plan. This was not uncommon, noted the commission; in the early stages of a change-over from flat to metered rates. Some customers did not realize immediately that their consumption of water under a flat rate might have been far beyond normal consumption. Therefore, they had not readjusted their former usage habits.

In addition, the company had not informed users about consumption possibilities at the time of the change to meters. The commission did not deem it unreasonable to ask the company to make adjustments of all unusually high bills in accordance with a nondiscriminatory formula equally applicable to all first-quarter charges that were substantially higher than would be expected normally. The commission realized it did not have jurisdiction to order an adjustment of bills rendered for past service, but urged the company to effect some settlement.

The commission reiterated previous holdings that the existence of both a flat-rate schedule and a meter-rate schedule in the same water system did not constitute undue discrimination as long as there was a definite program for conversion of the entire system from flat- to meter-rate service in progress. *Re Packanack Utilities Co. Docket No. 8972, January 25, 1956.*

Other Recent Rulings

Preference of Shippers. The Washington commission, in denying an application for rehearing on a common carrier certificate proceeding, held that preference of shippers to support a carrier proposing to offer services at rates lower than published tariffs was irrelevant to the granting or denying of the requested authority. *Re United Parcel Service of Seattle, Order M. V. No. 64367, February 7, 1956.*

Officers' Salaries. The Wisconsin commission, in authorizing a telephone company to increase rates so as to produce a return of 6.3 per cent, stated that consideration must be given, in determining the return, to the salaries paid officers who own or control the voting stock of the corporation. *Re Milton & Milton Junction Teleph. Co. 2-U-4521, February 15, 1956.*

Applicability of Main Extension Rules. The California commission held that a water company's main extension rules were designed for, and applicable to, extensions of mains contiguously from existing operative systems and presupposed a going utility operation which was merely to be extended or enlarged, but were not applicable to the acquisition of whole new systems or portions thereof. *Re Pacific Water Co. Decision No. 52651, Application No. 36914, February 14, 1956.*

Freight Operations Assume Passenger Deficits. The Oregon commission, in ordering an interurban railway to restore curtailed passenger service, commented that the company's freight operations should be made to assume the burden of passenger deficits where actual out-of-pocket loss was relatively low compared with the exceptionally high rate of return, and the public interest required frequent and dependable passenger operations.

Transit Savers, Inc. v. Portland Traction Co. Order No. 34218, F-2479, F-2478, F-2475, February 17, 1956.

Increase Only Avenue Available. The Colorado commission, in approving a local and joint freight rate increase filed by a motor common carrier association, stated that where the carriers had effected economies deemed advisable without impairing service and were still operating at a loss or a small margin of profit, the only avenue left available was to attempt to increase revenues. *Re Motor Truck Common Carriers' Asso. I. & S. Docket No. 382, Decision No. 45385, February 28, 1956.*

Furnishing of Steam under Sales Contract. The New York commission found no objection to a company's furnishing steam to a port authority which had bought its property where the company's present method of operation in supplying steam to tenants did not constitute it a public utility, and continuing to furnish steam to the transferred properties until termination of leases and removal of buildings did not alter the company's nonregulated status. *Re New York Dock Co. Case 17687, February 20, 1956.*

Split Pick-up Violation. The California commission directed a motor common carrier to cease and desist from collecting unauthorized charges and suspended its operating authority to transport groceries and grocer's supplies for five days after having found that the carrier had violated its split pick-up rule by not charging the shipper separate shipment rates for components that had been tendered on different days and picked up on different days. *Re Fortier Transp. Co. Decision No. 52510, Case No. 5658, January 23, 1956.*

Cost of Improvement Program. The New Jersey commission included the cost of an improvement program in a water company's rate base where the improvements were not directly revenue producing. *Re Pennsgrove Water Supply Co. Docket No. 8757, January 16, 1956.*

Motor Carrier's Certificate Authority Enlarged. The Iowa commission enlarged a motor carrier's certificate to include six more specified commodities upon a showing that there was a need for the small emergency shipments proposed and that the additional authority would not adversely affect existing carriers or bring about aggressive competition or cause an oversupply of transportation in the area. *Re Iles & McKinney (Film Transp. Co.) Docket No. H-4557, March 9, 1956.*

Filed Schedules Govern Noncertificated Area. The California commission held that a water company which had furnished service to customers outside its certificated area was bound by the rules and regulations filed with the commission and could not charge more for service extensions than the amounts set forth therein. *Plunkett v. Park Water Co. Decision No. 52530, Case No. 5587, January 31, 1956.*

Extension outside Certificated Area. A water company was ordered by the California commission to extend service to an applicant located outside its certificated area where the company had held itself out as ready, willing, and able to serve the territory. *DiLiberto v. Park Water Co. Decision No. 52529, Case No. 5607, January 31, 1956.*

Telephone Company Return. The Wisconsin commission considered a return of 6.21 per cent on a net investment cost base

reasonable for a small telephone company. *Re Boscobel Teleph. Co. 2-U-4519, February 15, 1956.*

Roads No Excuse for Poor Maintenance. The Missouri commission stated that the relocation of telephone lines due to changes in roads, although constituting a problem to the company, could not be accepted as a plausible excuse for failure to maintain the system adequately. *Re Inter-County Teleph. Co. Case No. 13,207, February 27, 1956.*

Increased Wholesale Gas Cost Passed On. A gas company was authorized by the Missouri commission to increase its rates so as to pass on to consumers a pending increase in the wholesale cost where the additional revenues would produce a return of 5.9 per cent, which the commission considered adequate and not excessive. *Re Missouri Pub. Service Co. Case No. 13,322, March 9, 1956.*

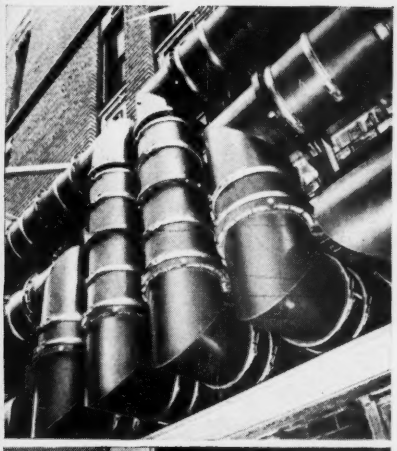
Crossing Application Not within Commission Jurisdiction. An application to abandon a crossing at grade and establish a similar one nearby was held not within the jurisdiction of the New Jersey commission where the crossing was not shown to be dangerous to the public safety or to impede public travel, but only an integral part of a traffic plan which had not yet been acted upon by the city council. *Re City of Englewood, Docket No. 8774, March 7, 1956.*

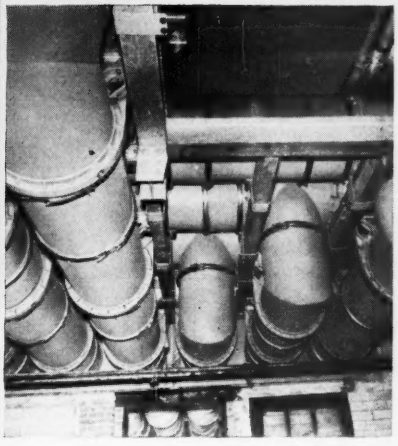
Additional Generating Equipment. The Wisconsin commission authorized a municipal electric plant to purchase and install additional generating equipment, notwithstanding that it would be more advantageous for the city to obtain additional power from an outside source, where the city council, the utility committee, and the city planning committee were unanimous in their determination to continue generating all of the electrical energy required in the area. *Re City of Arcadia, CA-3384, February 10, 1956.*

Standard Terms for Water Service. In granting a request by a small water utility for a specified rate increase, which would not be sufficient to avoid an operating deficit, the New Jersey commission required that a complete tariff be filed setting forth standard terms and conditions for supplying water service. *Re Blair Academy Water Dept. Docket No. 9171, April 11, 1956.*

Telephone Increase to Offset Wage Increase. The Minnesota commission authorized a telephone company to increase rates in order to offset the effects of an amendment to the Fair Labor Standards Act which increased the federal minimum hourly wage from 75 cents to $1. *Re Melrose Teleph. Co. M-3932, April 20, 1956.*

Nunc Pro Tunc Rate Approval. After a North Carolina commission order granting a railroad rate increase had been reversed by a trial court for failure to apply statutory standards and that decision was upheld by the state supreme court without a determination upon the reasonableness of the increased rates, the latter court indicated, upon petition to rehear, that a request for *nunc pro tunc* (retroactive) approval of the increased rates may be filed, though the commission would have to determine what increase was necessary to afford a fair return while its order was in force. *North Carolina ex rel. Utilities Commission et al. v. North Carolina et al. 91 SE2d 899.*





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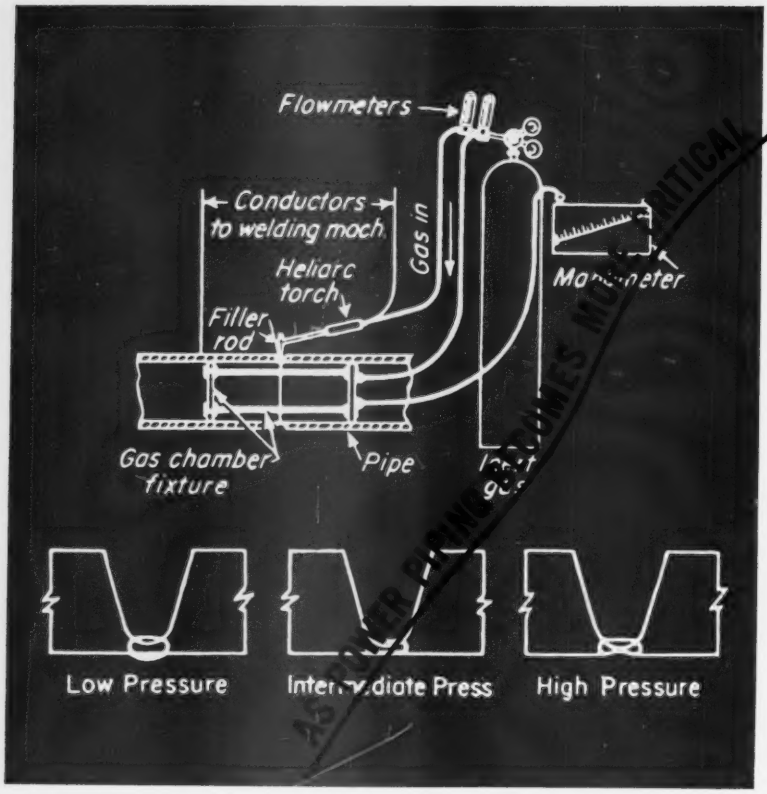

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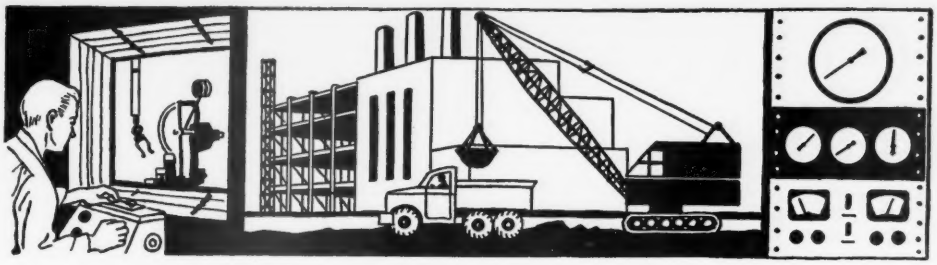

Industrial Progress

ctric Utilities Report Extensive Plant Expansion

NLY the word "impressive" can aptly describe the record of public utility company expenditures for plant and facilities construction during the recent past and projected for the next decade. New demand for electric energy has been ated by new industrial, commercial residential suburban development. ecial attention has been accorded the electric light and power companies to these growth trends in their n service areas. The section that is affected by this national expansion vement is virtually non-existent.

In step with the movement, the wer companies have projected new, viceable and—in many cases—ndsome facilities to meet the demand which they see in formation, or able to predetermine from vital tistics. Judging from the statements planned expenditures in the various mpany annual reports for 1955 there a continuing effort to meet all demand for electric service, quickly, efently, and effectively. The following excerpts from these reports to ckholders provide a representative ss section of these comments upon ividual company expansion plans.

Alabama Power Company, Birmingham, Ala. Additions to property the amount of $36,152,137 were de in 1955, bringing the total plant ount to $410,729,665. The company plans to construct, at an initial t of over $109,000,000, four new ns with generating facilities, and to ke additions to Lay dam and power nt on the Coosa river. These facilis will have an ultimate generating pacity of approximately 421,700 kw. e company also proposes to conuct a dam and power house on the sey fork of the Warrior river, and install generating facilities at the sting navigation dam of the United States government at lock 17. Construction expenditures for the year 1956 are estimated at approximately $35,482,000.

American Gas and Electric Company, 30 Church St., New York, N. Y. In the decade since World War II, the AGE System has invested almost $784,000,000 in new facilities. Expenditures for plant in 1955 amounted to $73,900,000—the sixth highest in the System's history. It is expected that the System's capability will be raised to 5,700,000 by the end of 1958—more than double its capacity at the end of 1951 and triple the capacity of the system at the end of 1947. Expenditures in 1956 are estimated to be about $135,000,000.

Arizona Public Service Company, Phoenix, Ariz. Since 1945, Public Service has spent over $130,000,000 to keep pace with demands for electric and gas service. Last year alone, the company spent $16,000,000 on new construction. The biggest outlay in 1955 was for the completion of the second 100,000 kw generating unit at the Saguaro power plant, which went into full operation in June. $16,786,400 has been earmarked for new construction in 1956.

Arkansas-Missouri Power Company, Blytheville, Ark. Total additions and improvements to the company's electric system in 1955 amounted to $1,284,000. The total investment in facilities has more than quadrupled during the ten-year period, 1946-1955, inclusive.

Arkansas Power & Light Company, Little Rock, Ark. Construction and expansion expenditures began to level off in 1955. A five-year construction program that reached a high of more than $41,000,000 in 1953, dropped to $13,491,288 in 1955. Having expanded major steam electric stations and transmission facilities to meet anticipated loads, the company in 1955 invested most of its construction funds in urban and rural distribution system improvements. This construction program will be continued in 1956, with a major share of the budget earmarked for the improvement of distribution facilities, and extension of lines to new customers.

Atlantic City Electric Company, Atlantic City, N. J. Additions and improvements to plant facilities in 1955 totaled $9,304,000. Investment in electric utility plant totaled $126,298,000 at the end of 1955. The expenditure of an estimated $14,400,000 in 1956 will include construction of additional operations and business offices, substations, improvements to the transmission system, and $4,850,000 of the cost of a new 23,000 kw turbo-generating unit at Deepwater, scheduled for completion in 1957.

Baltimore Gas and Electric Company, Baltimore, Md. Unprecedented expansion of facilities to meet the growing demands for more electricity and gas required the expenditure of over $43,000,000 in 1955. Work was nearly completed on the initial 125,000 kw generating unit at the new Herbert A. Wagner station. Plans are under way for a second 125,000 kw unit at the Wagner station for operation early in 1959. The 1956 construction program, is only slightly lower than 1955.

Bangor Hydro-Electric Company, Bangor, Me. The 1956 construction budget totals approximately $3,800,000. The major items are the completion of a new hydroelectric generating unit at the Milford station, the completion of the 110 kv transmission line from Veazie to Washington county and work on the new steam unit at the Edward M. Graham station in Veazie.

Boston Edison Company, Boston, Mass. Capital expenditures for expansion in 1955 were $21,625,011, as compared with $19,256,985 in 1954.

(*Continued on page* 46)

The demands of customers are increasing at an accelerated rate so that a greater increase in capital outlay is anticipated for 1956. Construction continued during 1955 on the installation at Mystic station in Everett of generating unit No. 4, which will have a capability of 140,000 kw.

California Electric Power Company, Riverside, Cal. Electric construction in 1955 was $11,128,000, a 44.6 per cent increase over 1954. Unit 4 of the Highgrove station was placed in operation completing the project which was started in 1950. The construction program for 1956 calls for an expenditure of over $16,400,000 including $6,700,000 for Unit 1 of the San Bernardino steam plant and $2,000,000 for new general office and service center facilities in the San Bernardino-Rialto area.

The California Oregon Power Company, Medford, Ore. Gross expenditures during 1955 for additions and improvements to electric property, plant, and equipment amounted to $11,514,820. Lemolo No. 1 hydroelectric plant on the North Umpqua river, with a rated capacity of 29,000 kw, was placed in service. Construction was continued on Lemolo No. 2 hydroelectric plant, and further investigations were made in connection with proposed hydroelectric plant development on the Klamath and McCloud rivers. An estimated $12,000,000 will be spent for construction in 1956. During the year the Lemolo No. 2, with a rated capacity of 33,000 kw, will be completed.

California-Pacific Utilities Company, San Francisco, Cal. A total of $1,544,065 was invested in new construction during 1955. In excess of $2,500,000 has been budgeted for 1956, to complete projects started in 1955 and for entirely new construction.

Carolina Power & Light Company, Raleigh, N. C. The outlay for construction purposes in 1955 totaled $21,778,000, which brings to $163,000,000 the amount spent by the company in the postwar period. The principal construction accomplishment of the year was the completion of the second 150,000 h.p. unit at the Louis V. Sutton steam electric generating plant. Construction planned for 1956 is estimated to cost $20,300,000, cluding $10,000,000 for new g erating capacity. In addition to completion of the 180,000 h.p. uni the company's Cape Fear plant, c struction will be started on a 225,(h.p. unit scheduled for completion 1958.

Central Illinois Electric and G Company, Rockford, Ill. Constr tion expenditures for 1955 were $ 367,000. A major portion of the 19 expenditures was attributable to w on the 30,000 kw turbine generator dition to the Sabrooke station. T unit was placed in commercial ope tion December 1, 1955. Estimated c struction expenditures for 1956 t $3,700,000.

Central Illinois Light Compa Peoria, Ill. Gross expenditures 1955 for construction and other a tions and improvements were $6,9 829. Electric facilities required 385,717. The major project begu 1955 and scheduled for completio 1957 is 100,000 kw steam turb generator additions to the R. S. W lace station. This will be the lar single unit in the system, and

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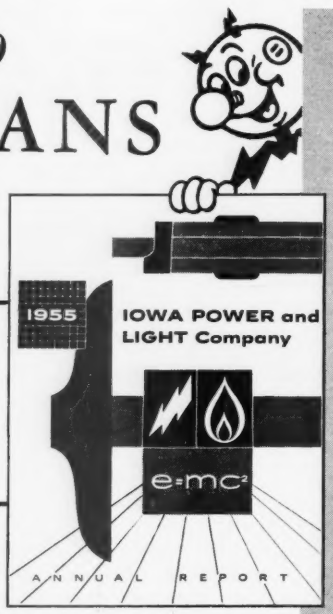

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Central Louisiana Electric Company, Inc., Alexandria, La. Construction expenditures for the year 55 aggregated $7,623,235. Of this ount, $6,974,619 was for electric cilities. The budget for the year 56 amounts to $7,410,000, of which 643,000 is for the electric department. The electric construction budget ludes the completion of the second it (54,000 kw) at the Teche power tion and the starting of construction on the fifth unit (60,000 kw) at Coughlin power station.

Central Maine Power Company, gusta, Maine. The company spent 6,884,254 for new construction and placements in 1955. Two new units re placed in operation late in the ar; an additional 30,000-kw hydro it at Harris Station and another 000-kw steam-electric unit at Mason ation. Work was also started on the w steam-electric plant at Cousins and where an initial installation of o 44,000-kw units are planned for mpletion in 1957-58.

Central and South West Corporation, Wilmington, Del. The construction program of subsidiary comies (Central Power and Light mpany, Public Service Company of lahoma, Southwestern Gas and ctric Company, and West Texas lities Company) totaled $60,894,- which was higher than in any year he system's history. Electric genting units having a capability of ,000 kw were completed and placed service, and work was continued on itional units of 316,000 kw of genting capability scheduled for comtion in 1956. A record budget of ,000,000 for construction in 1956 been approved. Approximately ,000,000 of the budget will be exded for new generating facilities.

Central Vermont Public Service rporation, Rutland, Vt. A total $2,363,187 was spent for additions, lacements and improvements to the mpany's properties in 1955. Of this ount $339,594, was spent on the struction of a new general office lding in Rutland. Other expendies were mostly for distribution line ensions and reconstruction of cer- distribution and transmission ilities.

The Cincinnati Gas & Electric mpany, Cincinnati, Ohio. Construction expenditures in 1955 amounted to $20,200,000. During the year work was started on the installation of a fourth turbo-generator unit having a capacity of 172,000 kw at the company's Walter C. Beckjord station. This unit scheduled for completion in the fall of 1957, will increase the capacity of the station to 500,000 kw, and the total generating capacity on the company's electric system to approximately 1,100,000 kw. Construction expenditures for 1956 and 1957 are estimated at $25,300,000 and $38,000,000, respectively, including $4,400,000 and $18,300,000 for the fourth tubo-generator unit referred to above.

The Cleveland Electric Illuminating Company, Cleveland, Ohio. A total of $31,749,000 was spent during the year for additions, replacement, and modernization of electric facilities. Construction progressed on schedule at the Eastlake power plant, where the fourth turbogenerator, a 240,000 kw unit, raises the plant's generating capability to 660,000 kw and the total system capability of its four power plants to 1,804,000 kw. At year-end the company's investment property and plant was $413,649,000. Its gross construction expenditures for the postwar period now total $269,000,000 with an additional $203,000,000 scheduled for expenditure through 1960.

Columbus and Southern Ohio Electric Company, Columbus, Ohio. The new 100,000 kw electric generating unit at Picway station was completed and placed in service in December 1955, at a cost of approximately $13,000,000. This unit increases the company's total installed generating capacity to 560,000 kw. In October construction was started on a new 125,000 kw electric generating station on the Muskingum river. Present plans contemplate an ultimate capacity for this station of approximately 500,000 kw.

Commonwealth Edison Company, Chicago, Ill. Expenditures in 1955 for new construction amounted to $114,044,484. 1955 was the biggest year in the system's history for additions of new generating capacity. Two new units totaling 320,000 kw were placed in operation at the Will county station. A new 207,000 kw was placed in service at State Line station. Pres-

(*Continued on page* 48)

We have prepared a comparative study on

Electric Utilities

giving extensive data on 97 companies, with brief comments on the stocks of those we favor.

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ent figures for future construction for the years 1956-1959, inclusive, are $600,000,000, divided as follows: $140,000,000 in 1956, $180,000,000 in 1957, $160,000,000 in 1958 and $120,000,000 in 1959.

The Connecticut Light and Power Company, Berlin, Conn. CL&P spent about $27,000,000 last year for its continuing construction program. Since 1950 the company's construction program has amounted to $122,000,000—more than the value of total plant and equipment at the end of World War II. Last fall the company brought into operation its 47,000 kw Shepaug hydroelectric project on the Housatonic river. A 105,000 kw steam generating unit in a new plant at Devon went into operation in February of this year. Both units together provide an increase of 27 per cent in the company's generating capacity. Even with this sizable gain, customer electric requirements are increasing so rapidly that plans are already made for further additions to generating capacity.

The Connecticut Power Company, Wethersfield, Conn. Expenditures for construction during 1955 amounted to $5,800,000 of which $5,200,000 was spent for improvements, additions and replacement of electric facilities. The current electric construction budget, which includes $2,500,000 of work now in progress, amounts to $6,600,000. Of this total, about $1,200,000 is for transmission facilities. Most of the balance will be spent on the purchase of equipment, replacements, and increasing the distribution system capacity and connecting new customers.

Consolidated Edison Company of New York, Inc., 4 Irving pl., New York, N. Y. The total amount spent for construction work in 1955 was $95,000,000. Construction of electric facilities accounted for the largest part of the expenditures—$80,000,000. Projects completed during 1955 included 180,000 kw turbine-generator installed in an addition to the East River generating station. Two 335,000 kw generating units, one for the Astoria station and one for a new station to be built adjacent to the Arthur Kill station on Staten Island, have been ordered. With expenditures for 1956 budgeted at $120,000,000, the fore for the five-year period 1956-196 $650,000,000.

Consumers Power Compa Jackson, Mich. Heavy demands electric and gas service since the of 1945 have required expendit for additions and improvements t ing approximately a half billion lars. The 1955 expenditures tot $74,000,000. During 1955 a seve unit of 156,250 kw capacity was ad to the John C. Weadock plant. T similar units are in the course of struction—an eighth unit at the W dock plant scheduled for service 1958, and a fourth and fifth unit at B. C. Cobb plant scheduled for op tion in 1956 and 1957, respectiv The construction budget for amounts to $91,000,000.

The Dayton Power and Li Company, Dayton, Ohio. Two portant projects were started in 1 One was the expansion of the Fr M. Tait generating station and other the construction of the new s ice building. In its initial stage Tait program calls for the expendit of approximately $23,000,000.

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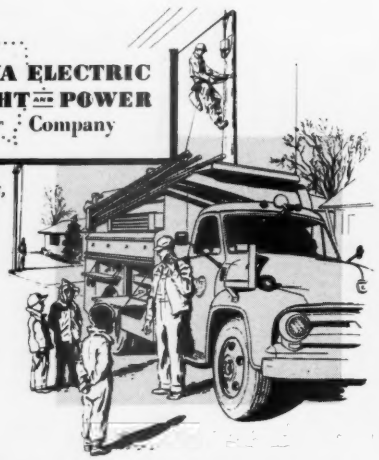

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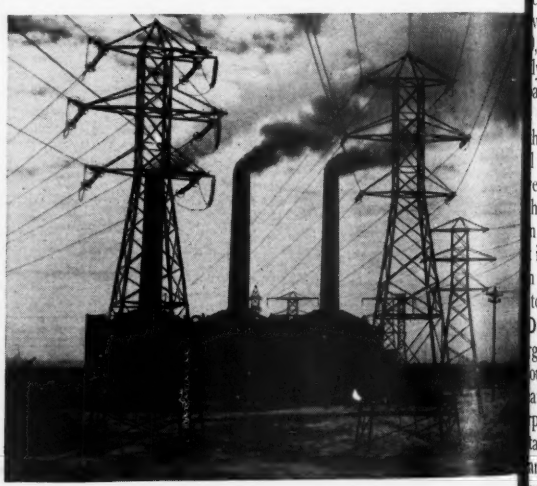

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udes the installation of a new high ssure 130,000 kw (name-plate rat-)—turbine-generator. This unit is eduled for completion in the fall of 7. When it goes on the line it will the company a total generating acity of 640,000 kw.

Delaware Power & Light Com-y, Wilmington, Del. Total ex-ditures in 1955 amounted to $15,-000. Work was begun on a new erating station on the Indian river he southern part of Delaware. It is ected that the new plant will be pleted in 1957 with an initial acity of approximately 80,000 kw. company is building a $22,000,-plant to supply steam and elec-ity to the new Tide Water As-ated Oil Company refinery. It is eduled for completion in the fall 1956.

The Detroit Edison Company, roit, Mich. Gross expenditures of ,616,872 in 1955 were the highest he company's history. The largest tion of this amount was spent at new River Rouge power plant. s new plant will cost $109,000,000 the presently planned three units ling 820,000 kw gross capability. first 260,000 kw unit was put into vice in February 1956. The second ,000 kw unit will probably be ready ly in 1957: Another unit, with a ability of 300,000 kw, is planned October 1957. The next addition he company's generating capability be provided at the St. Clair plant. enty-two new substations together h substantial additions to transmis-n and distribution systems, were in service in 1955. New construc-n work in 1956 is expected to cost to $95,000,000.

Duquesne Light Company, Pitts-gh, Pa. Property additions in 1955 ounted to nearly $39,000,000, the atest annual expenditure for such poses in the company's history. al expenditures since World War amount to about $245,000,000. The gest project involved in the 1955 struction program was the fourth erating unit at the Frank R. Phil-s power station. It is expected that penditures for plant additions in 6 and 1957 will be substantially less n those which have been made in last few years.

Eastern Utilities Associates, Bos-, Mass. Construction expenditures the system's four subsidiaries dur-1955 totaled $4,442,000. This pro-m included extension of the 115,-0 volt transmission system in the ckton territory and installation of additional transformer capacity at 115,000 volt substations in several locations. Present tentative plans contemplate the installation of an additional generating unit at Montaup Electric Company's Somerset station by the fall of 1959.

Edison Sault Electric Company, Sault Ste. Marie, Mich. Amount expended for property additions and improvements in 1955 was $868,131, compared to $589,140 in 1954. It is estimated that the 1956 construction budget will amount to $875,000. The major construction project for 1956 is the installation of a substation and transmission line to provide for an interconnection of the company's system with that of the Consumers Power Company.

The El Paso Electric Company, El Paso, Texas. The company expended on its construction program in 1955 a total of $3,431,545, for new facilities. Construction work was started in January, 1956, on a 50,000 kw capability unit at the Rio Grande power station. It is scheduled to be in service by the middle of 1957.

(*Continued on page* 50)

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The Empire District Electric Company, Joplin, Mo. Continuing an expansion program, construction expenditures in 1955 amounted to $3,900,000. This is the second year in a three-year construction program involving an estimated expenditure of $12,000,000. The two-year total stands at $7,900,000 leaving a balance of $4,100,000 for the year 1956.

Florida Power Corporation, St. Petersburg, Fla., and subsidiary Georgia Power & Light Company, Valdosta, Ga. Expenditures for expansion in 1955 totaled $26,825,903. The company now has a generating capability of 510,828 kw. A 70,000 kw addition to the George E. Turner plant went into commercial operation in November. A 70,000 kw turbine is scheduled to go into service at the Suwannee river plant in November 1956. The start of the erection of a 120,000 kw plant in St. Petersburg, to be known as the Paul L. Bartow plant, is contemplated for 1956. It is estimated that the company will spend $33,000,000 for construction in 1956 and $34,000,000 in both 1957 and 1958.

Florida Power & Light Company, Miami, Fla. Last year, FPL's generating capability was increased 22 per cent to 902,000 kw, an increase of 329 per cent since V-J Day. Generating capability will be increased by another 100,000 kw this year, with completion of a new unit at Palatka and other improvements. Construction expenditures totaled $42,500,000 in 1955 and the outlook is that 1956 expansion will require $43,500,000. The company has raised its 10-year construction program—originally set at $332,000,000 in 1951—to $435,000,000 for the period ending in 1961. FPL's largest plant expansion project —two 165,000 kw generators—is underway at the Lauderdale plant. The first is set for opertaion in 1957, the second in 1958.

Georgia Power Company, Atlanta, Ga. The company's postwar expansion program, begun in 1946, has required an investment of approximately $300,000,000 in electric facilities. A major portion of this money has been invested in new generating plants, five of which have been constructed and two others enlarged within this ten-year period. Generating capacity has been increased from 606,414 kw at the end of 1946 to 1,450,930 kw at the end of 1955, with an additional 255,000 kw under construction at the beginning of 1956. Construction plans for the next three years (1956-1958) will require an estimated additional investment of $137,000,000 —the largest three-year expenditure in the company's history.

Gulf Power Company, Pensacola, Fla. During the year, $3,773,000 was invested in new plant, principally for distribution facilities to supply the area's growing requirements for electric service. Larger loads in prospect will require additional generating capacity. Engineering and preliminary work will begin in 1956 for a new 75,000 kw unit at Crist steam plant near Pensacola. This unit will be completed in 1959, doubling plant capacity.

Gulf States Utilities Compa Beaumont, Texas. Expenditures system expansion in 1955 totaled $1 580,918, bringing to $196,725,392 amount spent on construction si the beginning of 1947. Gross additi to plant in 1955 amounted to $21,9 107. It is estimated that the 1956 c struction expenditures will amount $18,000,000. New work to be star in 1956 is expected to require $1 423,300, of which $7,600,000 rela to the connection of new custom and for increased requirements present customers. The remain amount will be spent on improveme to transmission and distribution s tems and for initial work on a seco 111,000 kw generating unit schedu to be in service in 1958 at the Nec station.

The Hartford Electric Li Company, Hartford, Conn. Gro ing loads have made necessary c tinued expansion of substation a distribution facilities. Approximat $3,000,000 of new capital was ad to plant during 1955 almost all which went into substation and tribution equipment.

The Housatonic Public Serv Company, Derby, Conn. Expen tures for construction in 1 amounted to $1,245,595, of which $ 073,688 was for electric operatio The construction budget for 1956 c for an expenditure of approximat $2,100,000 with $1,445,000 alloca to the electric department.

Houston Lighting & Power Co pany, Houston, Texas. Net ad tions in 1955 were $28,041,682, bri ing the total plant account to $27 631,381 at the end of the year. Th major new substations were built, several others were modernized expanded to keep pace with growth area loads. The 1956 construct program is estimated at $33,800,0

Idaho Power Company, Bo Idaho. In 1955, total expenditures new construction amounted to $7,47 000. Construction expenditures 1956 are anticipated to total $32,8 000, of which $21,600,000 is budge for the Brownlee hydroelectric velopment now under construction Snake river, the first and larg (414,400 peaking capacity) of th to be built by the company in H Canyon area. As soon as the Brown construction is well under way, w on the Oxbow unit (173,600 capaci will be undertaken. The third proj of the group at Hells Canyon, will low upon completion of the other

(*Continued on page 52*)

10 YEARS OF POST-WAR GROWTH

	1955	*1945*
Operating revenues	$40,320,576	$18,370,613
Net income	$ 7,018,920	$ 2,121,344
Electric sales (kilowatt-hours)	2,147,377,264	930,096,600
Electric customers (Dec. 31)	199,644	144,218
Electricity used in average home (kilowatt-hours)	3,168	1,347
Average price of residential electricity (cents per kwh)	2.416	3.336
Peak demand (kilowatts)	461,000	200,000
Generating capability (kilowatts)	528,000	221,500
Total payroll	$ 8,783,603	$ 3,313,171
Total taxes charged to operation	$10,713,149	$ 5,813,157

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2 Golden Gates! Since the end of World War II, Pacific Gas and Electric Company has nearly tripled its capacity at a cost of $1,500,000,000. That's forty-two times the cost of the Golden Gate Bridge! And we're *still* expanding.

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and will have 312,800 kw of capacity.

Interstate Power Company, Dubuque, Iowa. Construction expenditures in 1955 amounted to $5,369,871. This construction program included seventy-one miles of 161,000 volt transmission lines and three major substations. The 1956 construction expenditures are estimated to be $7,241,000. This program includes the beginning of the installation of a 33,000 kw steam generating unit and boiler at the Lansing, Iowa, power plant which will more than double the capacity of the plant. This new unit is to be placed in service in September, 1957.

Iowa Electric Light and Power Company, Cedar Rapids, Iowa. Since 1948, expenditures for property additions have totaled $53,157,822. Gross additions to property in 1955 amounted to $9,662,184. The largest single expenditure was $2,682,281, to complete the new Sutherland generating station at Marshalltown. Construction budget for 1956 calls for expenditures totaling $8,800,000.

Iowa-Illinois Gas and Electric Company, Davenport, Iowa. The company spent $6,220,828 on construction in 1955, including $3,542,293 for the electric department. The most important item of construction in 1955 was the completion of the addition to the Moline generating station, bring the station's total capability to about 119,000 kw. Construction for 1956 is expected to amount to $11,153,000 with $8,269,000 being earmarked for the electric department.

Iowa Power and Light Company, Des Moines, Iowa. The demand for electricity continues to increase. Due to the purchase of some additional power, earlier plans for the installation of a 75,000 kw reheat unit in May, 1958, have been revised. The service date for this unit has been extended until December, 1958.

Iowa Public Service Company, Sioux City, Iowa. Total expenditures for property and plant additions in 1955 were $6,733,875. Electric property added amounted to $5,233,915, or 78 per cent of the total. The electric generating capacity of the company at the end of 1955 was 191,076 kw. Present plans indicate an expenditure of approximately $4,500,000 for improvements and additions to property in 1956. Gross additions to property and plant during the last nine years represent approximately 62.5 per cent of the original cost of the company's utility plant as of December 31, 1955.

Jersey Central Power & Light Company, Asbury Park, N. J. The 1955 gross additions to property, plant and equipment amounted to $14,321,940. A new 137,500 kw addition at Sayreville station was placed in service on April 1, 1955. A second generating unit has been scheduled for completion in 1958 with construction starting in 1956.

Kansas City Power & Light Company, Kansas City, Mo. Additions of $28,947,691 to utility plant in 1955 constituted an all-time high for any single year in the company's history, bringing to approximately $177,0 000 the total investment in new pl in the ten years since 1945. current construction estimates for four years 1956-1959 indicate that penditures will total approxima $115,000,000, with $28,000,000 be budgeted for 1956.

Kansas Gas and Electric Co pany, Wichita, Kansas. Work o third unit at Murray Gill station p gressed on schedule during 1955. T new unit will provide an additio 115,000 kw of production capabi by mid-1956. The capacity of this unit exceeds the total capacity of the company's plants at the end World War II. Expansion and provement to company transmiss and distribution facilities were continued. Total construction penditures in 1955 amounted to $1 074,988.

The Kansas Power and Li Company, Topeka, Kansas. A to of $12,000,000 was spent during 1 for construction of facilities. property and plant account at origi cost has increased $91,000,000 or per cent since 1945. A new 33,000 turbo-generator and auxiliary equ ment was completed and placed service late in November 1955 at Tecumseh station, replacing equ ment of 12,000 kw retired. Constr tion contemplated for 1956 amount to $14,000,000. The larg project will be the addition of a n 90,000 kw turbo-generator, auxiliary equipment at the Tecum station. The project is scheduled operation in 1957.

Kentucky Utilities Compa Lexington, Ky. Construction of ditional facilities involved expen tures during 1955 of $15,600,000. is estimated that expenditures for next three years will total $40,400,0 with $20,800,000 budgeted for 19 The 1956 estimate consists of $9,00 000 to be expended in connection w the new E. W. Brown steam g erating station near Dix Dam; $ 750,000 for high-voltage transmiss lines and associated terminals; $2 000 for the purchase of the elect distribution system at Stearns, K tucky; and $7,810,000 for other ad tions to the company's operating s tem.

Louisiana Power & Light Co pany, New Orleans, La. Gross pro erty additions amounted to $17,96 242 in 1955, bringing the compan total plant investment to $145,977,2 —an increase of 13 per cent over 19

(*Continued on page 54*)

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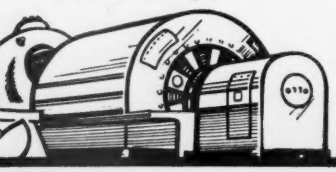

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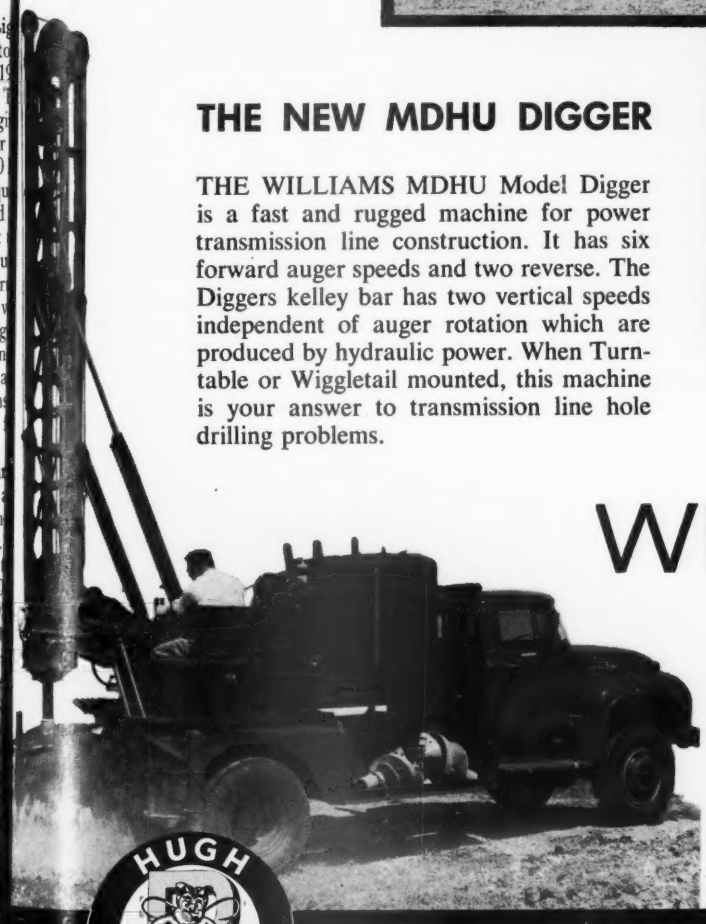

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Major item in the 1955 program involved the completion of Unit No. 3, with 135,000 kw of generating capability, at Ninemile Point station, bringing the company's generating capability up to 465,700 kw, more than triple what it was seven years ago. Orders were placed during the year for the installation of a sixth unit at the Sterlington station. This new unit with a generating capability of 210,000 kw is scheduled for completion in 1958. The 1956 construction program contemplates expenditures of approximately $18,000,000.

Louisville Gas and Electric Company, Louisville, Ky. A total of $18,299,379, was spent for expansion, renewals and additions to electric and gas facilities. Of this amount, $14,130,510 was for electric facilities. Construction of a second 100,000 kw electric generating unit at Cane Run station was practically completed during the year. First operation of this unit began in January, 1956. Construction is beginning on a third un of 125,000 kw capacity at this stati and is scheduled for completion 1958. It is anticipated that constru tion expenditures during 1956 will a gregate approximately $14,800,000.

Lynn Gas & Electric Compan Lynn, Mass. Electric department co struction expenditures amounted $489,230 in 1955. Plans for providi additional generating, transmissi and distribution capacity will be ma in 1956 to insure its availability wh required.

Metropolitan Edison Compan Muhlenburgh Twp., Berks Coun Pa. More than $9,000,000 was spe on property additions in 1955 and estimated $15,000,000 is forecast f 1956. Ground was broken in 1955 f a new generating station at Portlan Pa., on the Delaware river. The fi unit will have a capacity of 165,0 kw and is scheduled for operati early in 1958.

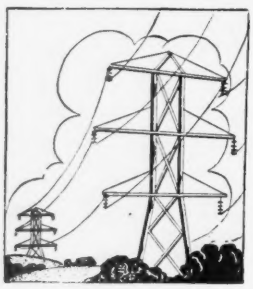
Michigan Gas and Electric Co pany, Three Rivers, Mich. Duri 1955, a record amount of $1,220,6 was expended on utility plant ad tions and replacements. $818,238 the expenditures were applicable the electric system. Plans for proper additions in 1956 include expenditu of $858,000 on electric properties.

Middle South Utilities, Inc., Ne York 6, N. Y. To meet demand creat by increased electric energy sales, t Middle South System has been e gaged in a continuing expansion pr gram. This has resulted in constru tion expenditures of $511,000,0 during the past 10 years, of whi $46,700,000 was spent in 1955. Co struction expenditures have be budgeted at $58,200,000 in 1956.

Minnesota Power & Light Co pany, Duluth, Minn. To keep ahea of the steady growth of load, initi steps were taken in 1955 to build new 65,000 kw steam electric pla near Cohasset on the Mississippi rive It will be named the Clay Bosw steam electric station in honor of t company's president. It is schedul for completion in 1958.

Mississippi Power Compan Gulfport, Miss. Construction was b gun in 1955 on the new Gulf Coa generating plant, located midway b tween Gulfport and Biloxi. It is sched uled for completion in 1957. The firs unit will have a capacity of 75,000 k with the plant design providing for a ultimate capacity of 500,000 kw. To tal 1955 construction expenditure were $3,874,575. It is anticipated tha

(*Continued on page* 56)



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$12,396,205 will be required for construction in 1956, of which $7,514,300 will be for the new generating plant.

Missouri Public Service Company, Raytown, Mo. Expentures for the construction of property additions during 1955 amounted to $4,774,494. The company's construction budget for 1956 totals $8,013,327. Included in the program are the construction of transmission lines and associated substation facilities and the construction of a new general office building at Raytown.

Montana-Dakota Utilities Company, Minneapolis, Minn. Property additions during 1955, exclusive of the aquisition of the properties of Montana-Wyoming Gas Pipe Line Company, totaled $12,021,414. Of this sum, $3,362,052 was spent on electric properties. The 1956 construction budget totals $9,000,000 of which $4,600,000 has been budgeted for electric additions.

New England Electric System, Boston, Mass. In 1955 construction program amounted to $42,000,000. Gross plant investment, including unfinished construction, was $544,000,000 at the end of 1955, of which $330,000,000 represents additions in the last 10 years. In 1956, the system expects to spend about $40,000,000 on new construction. Part of this will go toward a 140,000 kw addition to the Salem Harbor steam plant which is scheduled for completion in 1958. The two units now operating at Salem Harbor have capability of 160,000 kw.

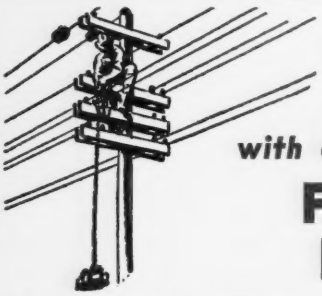
New England Gas and Electric Association, Cambridge, Mass. Net additions to the system properties in 1955 amounted to $4,800,000. The major part of the 1955 expenditures was for the purpose of extending service to new electric and gas customers and meeting the expanding requirements of existing consumers. The new construction program for the system for the four-year period 1956-1959, inclusive, contemplates expenditures of about $31,100,000. Of this amount, approximately $7,200,000 will be required in 1956. Present plans contemplate the addition in 1958 of a new electric generating unit in an existing system plant.

New Jersey Power & Light Company, Denville, N. J. In 1955, the expansion program was concentrat in the construction and reinforceme of transmission and distribution f cilities brought about by a 124 per ce increase in customer demands. Co struction expenditures by plant ca gories were: Production $50,0 transmission, $790,000, distribut $2,550,000, and general $8 0,0 making a total of $4,200,000. It is es mated that about $4,300,000 will expended for construction purpos in 1956.

New York State Electric & G Corporation, Ithaca, N. Y. Co struction expenditures for the years, 1946 through 1955, total $22 500,000 with expenditures in 1955 taling $26,400,000. Among the maj construction projects during 19 were the completion of the firs 13 000 kw unit of Milliken station, nor of Ithaca; and the start of installati of a 6,000 kw addition to the Hi Falls hydroelectric station, ne Plattsburgh. Expenditures for co struction in 1956 are estimated $23,900,000.

Newport Electric Corporati

(*Continued on page* 58)



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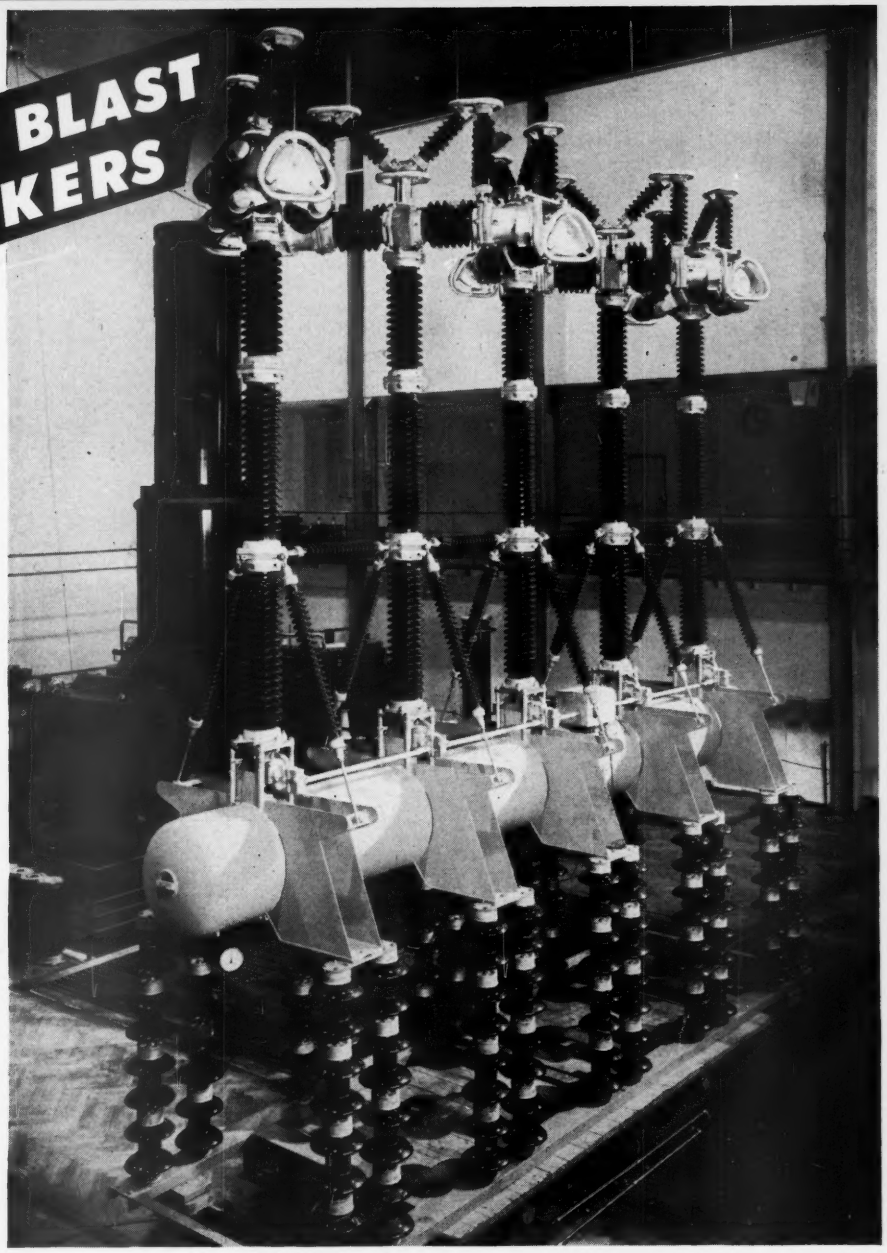

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Newport, R. I. Expenditures on construction in 1955 amounted to $510,100 which was $195,600 above expenditures in 1954. The major projects which accounted for this increase were a new 23,000 volt line to the Newport Navy Base and the installation of additional 69,000 volt transformer. Other construction consisted primarily of routine additions necessary to connect new customers and provide for increased loads.

Niagara Mohawk Power Corporation, Syracuse, N. Y. Electric and gas construction expenditures were $52,457,000 in 1955, which raised the system's utility plant account to $895,434,000. The 1955 amount brought construction expenditures to over $462,859,000 for the ten-year expansion period following World War II. Five Falls generating station, the second of five new hydroelectric plants on the Raquette river in northern New York, began operations in 1955. The third will be in service in 1956, and the fourth and fifth in 1957. Construction of a 200,000 kw steam-electric generating unit, the company's largest, was started during 1955. This unit is scheduled for operation at the Huntley station at Buffalo in 1957. A similar 200,000 kw unit for this station has been authorized for 1958 operation. The construction budget for 1956 is about $62,000,000.

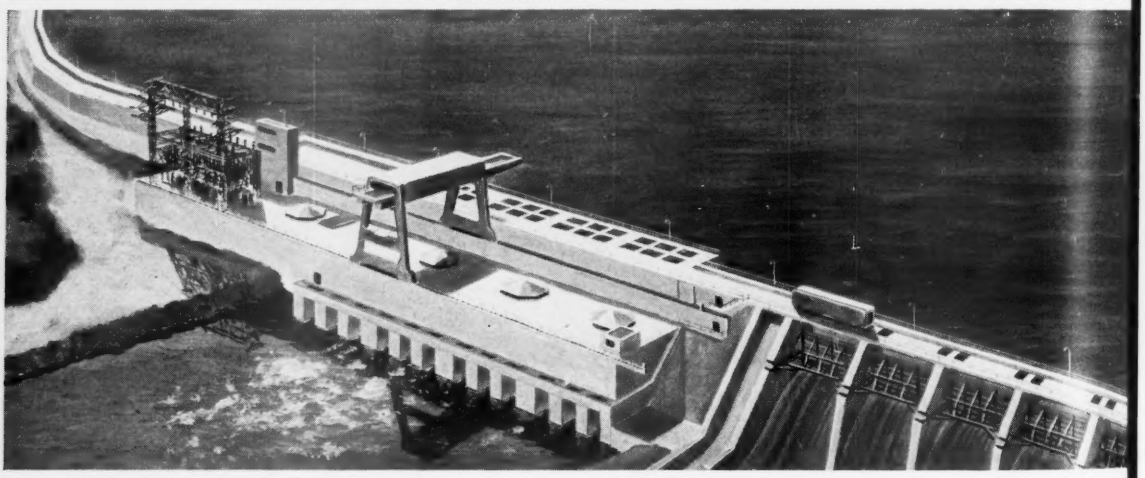
Northern Indiana Public Service Company, Hammond, Ind. To meet growing demand of customers, the company spent $23,705,000 for additions and improvements to facilities in 1955. Construction proceeded on schedule at the new Dean H. Mitchell generating station. It is expected that the first unit of this ultimate 6-unit plant will go into service in the fall of 1956, adding 130,000 kw of generating capacity. It is estimated that the 1956 and 1957 construction program will amount to $29,000,000 and $23,000,000 respectively.

Northern Pennsylvania Power Company, Towanda, Pa. Total property, plant and equipment at the end of the year amounted to $20,148,076, which includes net additions of $1,887,000 in 1955. A construction program amounting to approximately $2,000,000 is planned for 1956.

Northern States Power Company, Minneapolis, Minn. During 1955, $46,000,000 was spent for new construction. It is anticipated that co struction expenditures during 19 will total approximately $40,000,0 and during 1957 and 1958 will a proximate $39,000,000 and $38,00 000, respectively. Of the 1955 co struction expenditures, $40,771,0 was for electric facilities. The seco 100,000 kw unit was installed in t Black Dog steam plant in 1955 bri ing the total generating capacity of t system to 1,238,515 kw with a cap bility of 1,357,165 kw. Major proje expected to be completed in 1956 clude Unit No. 5 of 100,000 kw cap ity at High Bridge steam elect generating plant in St. Paul.

Northwestern Public Servi Company, Huron, South Dako The construction program in 1955 sulted in a net addition of $1,280,2 to utility plant investment, bringi the total to $25,720,407. The 19 budget calls for an expenditure $1,750,000 for construction. Ma electrical items planned are: A n carrier-supervisory system, additio river power interconnections and st stations, distribution extensions a rebuilds, and new street lighting.

(*Continued on page 60*)



Vepco's new Roanoke Rapids Power Station.

THE KEY WORD IS "MORE"

At the "Top of the South", the word for today — and tomorrow — is "more". More industry . . . more business . . . more homes . . . more people!

At Vepco, the answer is "more power"— 100,000 kilowatts more, now flowing from Vepco's big new Power Station at Roanoke Rapids, North Carolina. This $32,000,000 development is a part of Vepco's program of *continuing expansion.* A program designed to meet the ever increasing demands of a thriving, progressive area . . . to bring *more* electricity, in *more* ways, to *more* people than ever before.

Virginia Electric And Power Company

7th & Franklin Streets • Richmond, Virginia

A Year of New Highs

• The year 1955 was another PP&L record year. Many new highs, with marked gains over the previous year, record important Company growth as well as reflect economic progress in Central Eastern Pennsylvania.

New industries located in service area, 122 . . up 29%
Energy sales, 5.9 billion kilowatt-hours. . . . up 28%
System output, 6.6 billion kilowatt-hours . . . up 27%
Peak load, or maximum one hour requirement, 1,274,900 kilowatts. . . . . up 24%
Utility property, $534.6 million . . . . . up 18%
Operating revenues, $122.5 million. . . . . up 13%
Average annual use by residential-farm customers, 2,493 kilowatt-hours. . . . . up 8%
Number of shareowners, 94,198. . . . . up 8%
Earnings per share of common stock, $3.10 . . up 8%
Number of customers, 681,330 . . . . . up 2%

• Significant in the Company's expansion are the merging into PP&L of Pennsylvania Water & Power Company on June 1, 1955, and The Scranton Electric Company on January 31, 1956. The outlook for continued area progress is excellent. To provide for future growth, the Company will spend $157 million in the next five years to meet the future needs of a growing Central Eastern Pennsylvania.

PENNSYLVANIA POWER & LIGHT COMPANY

Ohio Edison Company, Akron, Ohio. Expenditures for system property addition and improvements in 1955 were $39,929,276. Of this total, $37,438,540 was by Ohio Edison Company and $2,490,736 by Pennsylvania Power Company. Two new units of 135,000 kw each at the Ohio Edison's R. E. Burger plant went into commercial operation in 1955. A 90,000 kw addition at the Edgewater plant is expected to be completed in 1957, and an addition of the same size is scheduled for completion in 1958 at Pennsyvania Power's New Castle plant. A 340,000 kw two-unit steam power plant at Stratton, Ohio, is scheduled to be completed in 1959-60. The system's construction program in 1956 calls for expenditures of approximately $53,000,000.

Oklahoma Gas and Electric Company, Oklahoma City, Okla. Construction expenditures for 1955 were $29,061,000. A new 110,000 kw steam turbo-generator was placed in operation in the Mustang station, increasing the size of the station to 220,000 kw. Construction was continued on the 170,000 kw steam generating unit at the Riverbank station. Upon completion of this unit, total plant capacities will be 721,400 kw, an increase of 293 per cent over 1945. Preliminary construction work was started on the installation of a 170,000 kw unit at the Horseshoe Lake generating station. This unit is scheduled for operation in 1958. The construction expenditure budget for 1956 amounts to $23,150,000.

Otter Tail Power Company, Fergus Falls, Minn. To keep pace with the constantly increasing demand for electricity, expenditures for new construction amounted to $4,400,000 during 1955, including $3,200,000 for transmission and distribution facilities. Construction expenditures during the next five years are expected to amount to at least $25,000,000.

Pacific Gas and Electric Company, San Francisco, Cal. Construction expenditures in 1955 totaled $133,000,000. About 260,000 kw of additional generating capacity was completed during the year. This consisted of the first 165,000 kw unit at the new Morro Bay steam plant, and 95,000 kw at the new Pit No. 4 hydro plant. A second unit of similar capacity will be completed at Morro Bay and the first 50,000 kw unit at the new Humboldt Bay steam plant will be placed in operation in 1956. In addition, during 1955 construction proceeded or was commenced on several large hydroelectric projects. At the 106,000 kw Poe plant on the Feather river tunnel work was well advanced at the end of the year. Contracts were awarded for the construction of Wishon and Courtright dams, the company's first units on the north fork of the Kings river. Upon completion, these units will add 261,500 kw. The company plans to start construction in 1956 of three additional hydro plants on the Feather river with an aggregate capacity of 258,000 kw. Construction will also get under way on an additional 165,000 kw unit at station P in San Francisco.

Pacific Power & Light Company, Portland, Ore. Construction expenditures for 1955 totaled $14,299,000, bringing the amount spent for construction in the 10-year period since World War II to more than $150,000,000. The company estimates that expenditures for construction in 1956 will be approximtaely $29,400,000, which includes $9,500,000 budgeted for initial work on the Swift hydroelectric project; $1,300,000 for the start of a new 100,000 kw steam power plant in Wyoming and $750,000 for preparation for a third power generation unit at the company's Merwin dam on the Lewis river.

Pennsylvania Power Company, New Castle, Pa. Construction expenditures were $2,490,736 in 1955, which was $53,621 more than in 1954. A fourth generating unit in the New Castle power plant is scheduled to be placed in service in 1958. This unit, with a capacity of 90,000 kw, will increase the net capability of the plant to 263,000 kw. The project, which will include related facilities for putting the additional power into the company's system will require a total expenditure of approximately $17,500,000.

Pennsylvania Power & Light Company, Allentown, Pa. Construction expenditures in 1955 totaled $31,400,000. At Martins Creek plant construction on the extension, which includes a second turbine generator unit rated at 132,500 kw continued on schedule. The additional facilities are expected to be in service in 1956. Based on present estimates of load growth, about $157,000,000 will be required to carry out the company's construction program over the next five years—with $32,800,000 to be spent in 1956.

Philadelphia Electric Company, Philadelphia, Pa. The company's physical plant, which totaled $868,349,533 at the end of 1955, includes over a half-billion dollars in new construction in the ten postwar years. New construction expenditures in 1955 were $68,308,168, approximately $53,100,000 of which was spent for electric facilities. The second turbo-generator at Cromby electric generating station was completed in 1955, raising the capability of that station to 385,000 kw. This new unit has a capacity of 220,000 kw. Future expansion and improvement of facilities are scheduled over the next five years at an average weekly expenditure of

(*Continued on page 62*)

OKLAHOMA GAS AND ELECTRIC COMPANY

. . . continues to expand steadily and substantially in the center of the prospering Great Southwest.

	1955	*1950*	*% Increase*
Operating Revenues	$ 44,046,000	$ 26,010,000	69%
Net Income	$ 8,367,000	$ 4,703,000	78%
% Net Income to Operating Revenues	19%	18.1%	
Customers Served December 31	314,363	269,491	17%
Electric Plant	$202,360,000	$124,592,000	62%
Generating Capacity	551,400 Kw	290,455 Kw	90%

Write for our 1955 Annual Report for factual and more complete information of our service area.

OKLAHOMA GAS AND ELECTRIC COMPANY (Live Better Electrically)

Serving Adequate, Dependable, Low-Cost Electricity

DONALD S. KENNEDY, *President*

Blown out by Mr. Edison and friends!

Read how banks helped the electric light illuminate all America

One idea made the kerosene lamp obsolete.

But it has taken billions of dollars to replace it, and much of the money has been provided by loans from commercial banks. The story goes like this:

After Mr. Edison and his private backers proved the new incandescent lamp practical, progressive men the country over saw that electric light could be sold cheaply to all the people.

From the first, the job was too big—too costly—for any individual to tackle. So groups of citizens got together and formed light and power companies.

Then, as the industry expanded, even the most prosperous companies lacked enough hard cash for generating more power, stringing up miles of new wire, and delivering current to millions of new consumers. So they turned to the nation's banks for assistance.

In less than half a century America was able to put the kerosene lamp on the museum shelf.

But there is nothing exceptional about this example of banking's contribution to progress. The simple fact is that it is banking's job to put the community's idle money to work wherever and whenever bankers find opportunity for profitable enterprise.

Money at work in utilities or any other industry results in jobs for men and women, returns for investors, and a high standard of living for the American people.

The Chase Manhattan Bank of New York, first in loans to American industry, is proud of the part it is playing in our nation's progress.

THE
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MANHATTAN
BANK

(MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION)

$1,400,000. Annual expenditures for new construction have followed an upward trend since the war, and present growth is expected to require expenditures of more than $370,000,000 for the period 1956-1960.

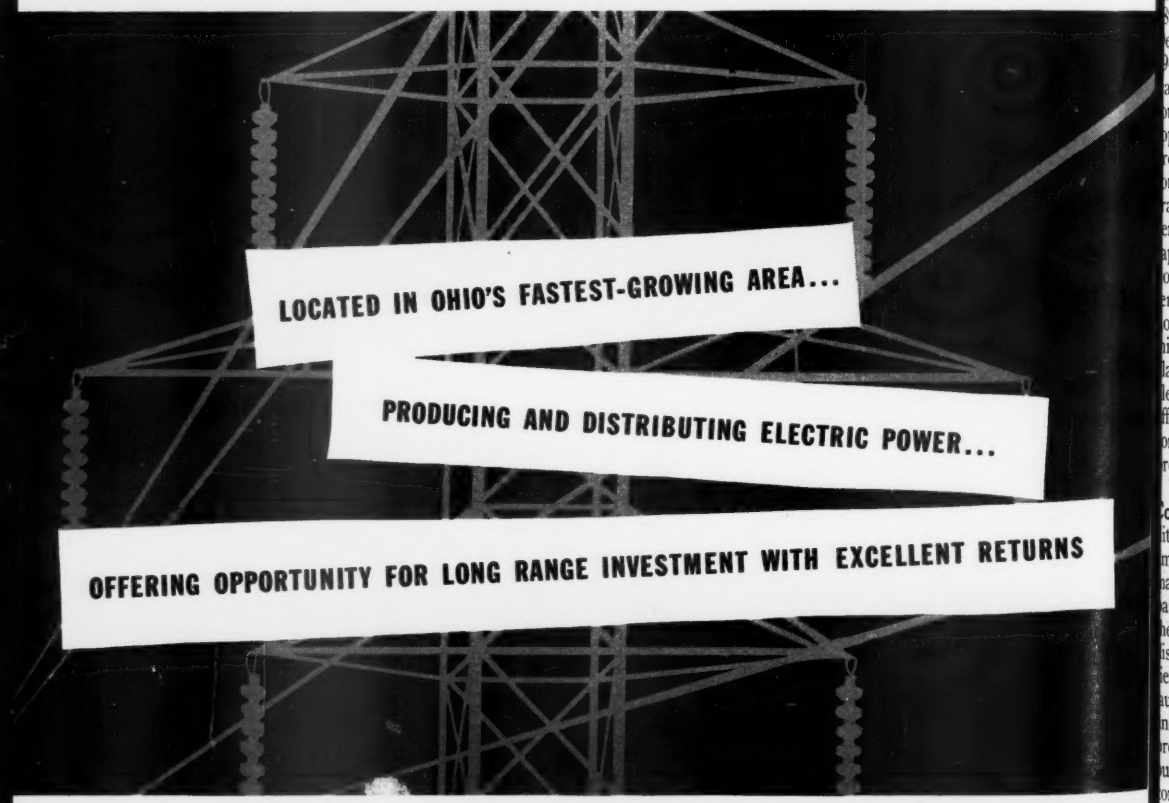
Portland General Electric Company, Portland, Ore. During 1955 the company spent $11,000,000 in new construction. One of the most significant items in the 1955 construction program was completion of a $1,400,000 service center in Portland. Normal construction expenditures of about $10,000,000 are contemplated for 1956. In addition, it is expected that another $10,000,000 will be spent starting the construction of the 53,000 kw North Fork project on the Clackamas river, the 25,000 kw expansion of the Faraday plant on the Clackamas, and development of the Pelton project on the Deschutes river.

Potomac Electric Power Company, Washington, D. C. A total of $101,630,000 has been spent during the past five years to enlarge and improve property and plant with $20,537,000 being spent in 1955. It is expected that construction expenditures will continue at a high level for some time to come. An additional unit of 90,000 kw rated capacity was put into service recently at the Potomac river plant and another 90,000 kw unit is expected to be ready in 1957.

Public Service Company of Colorado, Denver, Col. In 1955, as in the previous ten years, the construction program of the company continued at an accelerated rate, with gross construction expenditures reaching an all time high of $25,935,000. The bulk of the construction expenditures, $17,800,000 was for electric facilities. The fourth electric generator at the Arapahoe station, a 100,000 kw unit, was placed in service, increasing the generating capability of the station to 256,500 kw. At the same time ground was broken for a new Cherokee station north of Denver. The initial 100,000 kw unit at this site is scheduled to be placed in operation in 1957. Construction expenditures for the years 1956 through 1959 are estimated at $120,000,000 of which $29,400,000 is scheduled for 1956.

Public Service Company of New Hampshire, Manchester, N. H. Approximately $10,500,000 has been spent in new construction in each of the years 1954 and 1955. Expenditures for 1956 are estimated at $12,500,000 the largest single item being associated with construction of an addition to the generating facilities at Schiller station scheduled for completion in 1957. In May of 1955 a new generating unit of 50,000 kw capability was added to the Schiller station and at the same time ground was broken for another unit, the third of this design and capability. When the unit now under construction is completed, the capability of the Schiller station will approach 200,000 kw and will rank it as the largest fuel-burning plant in northern New England.

Public Service Company of New Mexico, Albuquerque, N. M. During 1955 the company expended approximately $2,200,000 for new construction. A large part of this sum was spent in the construction of new substations and in enlarging the capacity of older substations. Construction ex-


LOCATED IN OHIO'S FASTEST-GROWING AREA...
PRODUCING AND DISTRIBUTING ELECTRIC POWER...
OFFERING OPPORTUNITY FOR LONG RANGE INVESTMENT WITH EXCELLENT RETURNS
Columbus and Southern Ohio Electric Company

nditures during 1956 are expected be approximately $4,000,000. Most this sum will be spent on new sub-ations, transmission lines and street hting. Also included in this figure an anticipated expenditure of ap-oximately $1,000,000 on the initial nstruction costs on the No. 4 Unit Person station. Installed generating pacity for the entire system was 2,100 kw as of December 31, 1955.

Public Service Company of Okla-oma, Tulsa, Okla. At year-end, in-alled generating capacity was 422,-0 kw as compared to 155,621 kw in 45, an increase of 172 per cent in e 10-year period. Expenditures for ctric facilities amounted to $17,-0,000 in 1955. $6,900,000 was in-sted in steam electric generating ca-city consisting of one 175,000 kw d one 40,000 kw electric turbo-gen-ating unit now being installed in the lsa electric generating station. An-her 175,000 kw electric generating it is scheduled for delivery to the lsa station in 1958.

Public Service Electric and Gas ompany, Newark, N. J. In 1955 ex-enditures for electric and gas plant ditions and improvements totaled 9,420,906. Total utility plant as of ecember 31, 1955 amounted to 47,982,112, of which $631,097,804 as electric plant. It is estimated that nstruction expenditures in 1956 will proximate $100,000,000. Substantial rogress was made during the year in nstruction of the new Linden gen-ating station, started in 1954. Two enerating units, each of 225,000 kw apacity, comprise the initial installa-on and are expected to be placed in rvice in 1957. A new generating sta-on in Ridgefield, N. J., to have an itial capacity of 550,000 kw is anned for service in 1958. On com-letion of these installations, the total ffective generating capacity of the ompany's seven stations will ap-roximate 3,000,000 kw.

Puget Sound Power & Light ompany, Seattle, Wash. Gross ad-itions to utility plant in 1955 mounted to $9,821,562. These pri-arily provided service for the com-any's 6,330 new customers and for e expansion and improvement of istribution and transmission facili-es. Three major projects were unched in 1955—The Upper Baker nd Snoqualmie Falls hydroelectric rojects and a new office and service uilding program. $87,000,000 of new onstruction has been planned for the ears 1956-1959 with $20,000,000 be-ng budgeted for 1956.

Rochester Gas and Electric Corporation, Rochester, N. Y. During the 10 years since 1945, plant investment has more than doubled, totaling over $188,000,000 at the present time. Total construction expenditures during 1955 for all departments of the company were $15,552,599. The cost of additions to electric plant facilities during 1955 amounted to $7,858,973. Construction of the fourth steam-electric generating unit at Russell station was started during the year. It is estimated that over $100,000,000 will be spent on new construction during the five years beginning in 1956 with expenditures in 1956 amounting to $23,000,000. Electric plant additions and improvements in 1956 will approximate $18,200,000. The major expenditure for the electric system will be in connection with the fourth unit at Russell station and its related facilities. When completed in 1957 this unit will add 82,500 kw of capacity.

Rockland Light and Power Company, Nyack, N. Y. A total of $6,707,585 was spent for construction in 1955 by Rockland Light and Power and subsidiaries. The total generating capacity of the system was more than doubled by the addition of Unit No. 3 (70,000 kw) at Lovett plant and the 18,000 kw Grahamville hydroelectric generating plant. The 1956 construction program will amount to about $6,500,000.

St. Joseph Light & Power Company, St. Joseph, Mo. Of the $2,214,000 of construction work budgeted for 1955, $1,886,200 was completed and $327,800 carried over to 1956. Expenditures for new construction for 1956, including the completion of projects carried over from 1955, are estimated at $3,413,000. The largest item of the budget is the 1956 expenditure on the new 25,000 kw steam generating unit at the Lake road plant, scheduled for completion in 1957 at an estimated completed cost of $4,300,000.

San Diego Gas & Electric Company, San Diego, Cal. Additions to physical plant in 1955 required gross capital expenditures totaling $18,273,793. A total of $13,544,809 was invested in electric department facilities. The largest expenditure in the electric department was $6,346,900 for work on Unit No. 2 of Encina electric generation station, which will be completed in 1956, at a total cost of approximately $11,800,000. Installation of this unit will increase the company's steam-electric generating capability to a total 566,000 kw, of which 410,000 kw, or 72.4 per cent, will have been installed since the end of World War II. Expenditures totaling $19,072,300 have been budgeted for new construction during 1956, with $14,650,000 being allotted to the electric department. The major electric expenditure will be about $4,400,000 for the completion of Unit No. 2 at Encina station. The construction of Encina Unit No. 3 will start in 1956. This unit is scheduled for completion in 1958, at an estimated cost of $13,000,000.

(Continued on page 64)

BLACK HILLS POWER AND LIGHT COMPANY

RAPID CITY, SOUTH DAKOTA

Supplies electric service to the rapidly growing Black Hills Area in Western South Dakota and Eastern Wyoming

Fiscal Year	Gross Electric Revenue	Net Income	Dividends Paid	
			Preferred	Common
1950	$2,849,802	$501,973	$83,207	$259,110
1951	3,169,838	469,325	80,747	259,110
1952	3,463,445	503,552	78,046	291,491
1953	3,841,185	549,210	75,891	302,285
1954	4,229,342	604,797	74,230	320,333
1955	4,939,382	704,305	141,808	350,928

Sierra Pacific Power Company, Reno, Nevada. To serve the record increase in customers and to expand and improve facilities, the company spent $3,119,754 for construction during 1955. It is anticipated that expenditures for these purposes during 1956 will approximate $3,700,000.

South Carolina Electric & Gas Company, Columbia, S. C. Total gross construction expenditures of the company and its subsidiaries in 1955 were $15,298,000, of which $13,997,000 related to electric plant. Construction expenditures of $73,378,000 have been forecast for the three years 1956, 1957 and 1958. The forecast includes funds for the construction of a new high pressure steam-electric generating station near the Saluda hydroelectric project, estimated to cost approximately $35,000,000, including an initial unit of 137,500 kw capability scheduled for completion in 1958, and an identical second unit, being tentatively considered for completion in the same year.

Southern California Edison Company, Los Angeles, Cal. The rate of growth within the company's service area over the last several years, and its marked acceleration in the year just ended, has led to an upward revision of expected plant expenditures. In the year 1956 such expenditures are budgeted at more than $123,000,000. It is expected that a smiliar amount will be expended in 1957. The first unit at El Segundo steam station began commercial operation in 1955. This unit, which is the first of two at this location, cost approximately $24,000,000, and has an effective operating capacity of 175,000 kw. Although the first unit at El Segundo was the only generating facility completed during the year, construction was continuing on a number of others.

Southern Colorado Power Company, Pueblo, Colo. Additions and improvements to property in 1955 brought its physical condition to the best overall point in company's history. The construction budget for 1956 is approximately $3,000,000, about $1,700,000 representing additions carried over from last year. Of the remaining $1,300,000, the major items are for extensions to connect new business and reconstruction of distribution lines to provide more capacity and substation additions.

Southern Indiana Gas and Electric Company, Evansville, Ind. Expenditure in 1955 for property additions and improvements amounted to $6,604,692. Of the total, $5,194,263, or 78.7 per cent, was for electric facilities. A major plant addition during 1955 was the completion of the first 40,000 kw unit of the Culley station on the Ohio river above Newburgh. It is presently estimated that the company's 1956 construction program will be approximately $4,500,000.

Southwestern Gas and Electric Company, Shreveport, La. Construction expenditures of $14,934,000 in 1955 exceeded any previous year. In the past 10 years such expenditures have totaled $95,000,000, representing 80 per cent of gross plant investment at the close of 1955. Installation of fourth generating unit at Knox Le power plant was completed in 195 Work was underway in 1955 to fur ther increase plant capacity by the in stallation of a new 100,000 kw uni at the Lieberman power plant. Th construction program will continue a a high level in 1956 with expenditure of more than $20,000,000 budgeted.

Southwestern Public Servic Company, Dallas, Texas. Approxi mately $14,268,000 was expended fo new facilities during the 1955 fisca year, thereby increasing gross plan account (including work in progress to more than $193,450,000 at Augus 31, 1955. Unit No. 4 at the Denve City plant was completed, increasin the capability of this plant to 94,00 kw. A third generating unit wa placed in service at Plant X, increasin the capability of Plant X to 277,50 kw. The system steam power plan capability at August 31, 1955 totale 746,800 kw. An expenditure of ap proximately $12,863,000 has bee budgeted for the construction of new facilities in the 1956 fiscal year. Th budget includes a portion of the cos of a new 75,000 kw generating statio to be constructed near Hobbs, New Mexico. This station is scheduled fo completion during the spring, 1957.

Tampa Electric Company, Tam pa, Fla. The Fifth unit—75,000 kw— at the Hooker's point station wa placed in operation in 1955. It is ex pected that the first unit at the Gar non station—120,000 kw—will b completed mid-1957. A second 120, 000 kw unit is planned for the latte station, to be ready for the fall of 1958

Texas Electric Service Company Fort Worth, Texas. In order to kee abreast of the area's progress the com pany's construction program has con tinued at a rapid pace with construc tion costs for 1955 totaling $15,997, 464. Work was started on a new 175, 000 kw generating unit at the Eagl Mountain steam-electric generatin station at Fort Worth. This unit i scheduled for completion in 1957. An other unit of 115,000 kw capabilit has been ordered at the western en of the system. Construction budge for 1956 is set for $24,000,000.

Texas Power & Light Company Dallas, Texas. The company con tinued its expansion program in 195 with expenditures for additional an improved facilities during the yea amounting to $16,262,178. Construc tion of the Collin steam electric sta tion in North Texas was complete

(*Continued on page 66*)

Within Connecticut—Diversity

Natural Gas Service (Straight 1000 Btu) is supplied in:
Stamford, Torrington, New London.

Electric Service is supplied in:
Stamford, Torrington, New London, Manchester, Middletown, Thomaston, Darien, Waterford, Montville, Portland, Cromwell, Durham, Middlefield, Farmington, Avon, Collinsville, New Hartford, Lakeville, Salisbury, Sharon, Canaan, Norfolk and Falls Village.

Nationally known manufacturers who use our service:
American Brass, American Cyanamid, Cheney Bros., Collins Company, Conn Broach & Machine, Ensign Bickford, Fitzgerald Manufacturing, Goodyear Rubber, Hayden Manufacturing, Machlett Laboratories, Nelco Metals, Northam Warren Corp., Norma Hoffmann, Pitney Bowes Postage Meter, Plume & Atwood, Remington Rand, Robert Gair, Robertson Paper Box, Ronson, Russell Mfg., Seth Thomas Clock, Sheffield Tube, Sidney Blumenthal, Stamford Rolling Mills, The Torrington Co., Torrington Manufacturing, Turner & Seymour, Underwood Corp., Union Hardware, U. S. Gypsum, Yale & Towne, Warrenton Woolen, Whiton Machine, Wilcox, Crittenden & Co.

THE CONNECTICUT POWER COMPANY
General Office: 176 Cumberland Avenue, Wethersfield, Conn.

Annual Report on Request.

BORE HOLES . . . SET POLES, FASTER and CHEAPER

For speed, dependable performance and economy of operation, Jaques Earth-Boring Machines will out-perform any on the market. These self-contained units will bore holes 9 to 60 inches in diameter *ten* feet or deeper no matter how tough the job or soil.

All operations are hydraulically controlled for speed and ease of handling. The speed of cutting is automatically regulated by the hydraulic feed according to the texture of soil. A pole setting attachment enables one crew to complete the job, saving time and manpower. The wiggle tail mounting allows digger movement for ease of spotting.

Jaques machines are the result of a third of a century of research, pioneering and experience in building earth augers. Four models are available . . . The Heavy Duty K-330, The Standard Model KJ-254 (shown), The Extra Heavy Duty K-337 and The Light Duty KV-500. Phone or write for full information and prices.

JAQUES EARTH AUGER CO.

1114 Harry Hines Blvd. • DALLAS, TEXAS • Telephone EL-3612

Hydraulic Earth-Boring Machines . . . Augers and Reamers

and the plant placed in service in June. Completion of this station brings the company's total generating and purchased capacity to 707,200 kw. Preliminary plans were made for the construction of another outdoor type power plant on Stryker creek in East Texas, scheduled for initial operation in 1958.

Texas Utilities Company, Dallas, Texas. The power supply of the Texas Utilities System (Dallas Power & Light Company, Texas Electric Service Company and Texas Power and Light Company) was increased by 295,000 kw in 1955. The entire property construction program in 1955 represented expenditures of $52,400,000. Three other generating units totaling 405,000 kw are planned for completion in 1958. The plans for 1956 contemplate an outlay of approximately $60,000,000 with about $75,000,000 to be expended in 1957 and $65,000,000 in 1958 to carry through the program now in sight.

The Toledo Edison Company, Toledo, Ohio. To meet increasing demands, the company has expanded its facilities steadily. In 1955, the construction program totaled $25,000,000, much of it going toward completion of the new Bay Shore station which was put into operation in September. The addition of Bay Shore station increases the company's total generating capability to 510,000 kw. The company proposes to spend approximately $11,400,000 in 1956, $18,700,000 in 1957 and $19,200,000 in 1958.

The Tucson Gas, Electric Light and Power Company, Tucson, Ariz. Net additions of $1,032,050 were made to the electric property in 1955. The company recently announced plans for the construction of a power plant east and south of Tucson. This plant's first generating unit will cost an estimated $11,000,000. A similar amount will be spent—over a period of time—for distribution services. The new unit, with a rated capacity of 75,000 kw and an expected capability of 83,000 kw is being planned for operation in the spring of 1958.

Union Electric Company of Missouri, St. Louis, Mo. Construction expenditures reached $33,800,000 in 1955—$5,600,000 more than in 195 Planned for the next five years is $290,000,000 construction progra This is a yearly average of $58,000 000, as compared with an average $36,000,000 spent in the past fi years. Construction will begin in 19 on a 280,000 kw turbo generator u to be added to the Meramec plan When completed in 1958, the capaci of Meramec will be in excess of 500 000 kw and it will be the largest an most efficient plant in the system. Th new unit will boost the system's ge erating capacity by over 15 per cen

Utah Power & Light Company Salt Lake City, Utah. During 19 a little over $16,000,000 was spent fo new electric facilities by Utah Pow & Light Company and subsidiary, Th Western Colorado Power Compan bringing the 10-year total for this pu pose to $124,250,000. An expenditu of $5,400,000 for production facilitie included $4,750,000 for completion

(*Continued on page 68*)

This announcement is not an offer to sell or a solicitation of an offer to buy these securities. The offering is made only by the Prospectus.

$40,000,000

Southern California Gas Company

First Mortgage Bonds, Series B, due 1981
(3⅞%)

Dated June 1, 1956 — Due June 1, 1981

Price 102.016% and accrued interest

The Prospectus may be obtained in any State in which this announcement is circulated from only such of the undersigned and other dealers as may lawfully offer these securities in such State.

HALSEY, STUART & CO. INC.

DICK & MERLE-SMITH — FRANCIS I. DuPONT & CO.

EQUITABLE SECURITIES CORPORATION — LADENBURG, THALMANN & CO.

REYNOLDS & CO. — SHIELDS & COMPANY — BAXTER, WILLIAMS & CO.

STROUD & COMPANY INCORPORATED — BALL, BURGE & KRAUS — GREGORY & SONS — HIRSCH & CO.

NEW YORK HANSEATIC CORPORATION — WM. E. POLLOCK & CO., INC.

AUCHINCLOSS, PARKER & REDPATH — STERN BROTHERS & CO.

BACON, WHIPPLE & CO. — BURNHAM AND COMPANY

BURNS BROS. & DENTON, INC. — SCHWABACHER & CO.

May 24, 1956

Snug right-of-way just routine condition for compact maneuverable Cleveland®

Dodging utility poles, trees and other obstructions, the compact, husky Cleveland "110" cuts utility trenches efficiently in narrow clearances like this. Its full-crawler mounting and low ground bearing pressure are real public relations assets because they minimize damage to lawns, sidewalks and driveways . . . permit efficient digging in soft muddy ground and rugged terrain too. Fast, safe trailer portability, coupled with full-crawler on-the-job maneuverability and a wider range of usable digging speed combinations make Clevelands fast *to* the job and fast *on* the job. You dig more trench . . . in more places . . . at less cost . . . with dependable Clevelands, first choice for utilities trenching for more than 30 years. Talk it over with your local distributor.

Good Everywhere

THE CLEVELAND TRENCHER COMPANY

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the Gadsby and Carbon steam-electric plants. Total generating capacity of the system at the end of the year was more than 620,000 kw. The companies estimate that the construction program for 1956 will amount to approximately $18,750,000.

Virginia Electric and Power Company, Richmond, Va. Additions in 1955 totalled $48,191,000, the third largest amount ever added in any year. Electric property additions amounted to $43,293,000, or 90 per cent of total additions. The investment in property and plant at the end of the year amounted to $481,000,000. Of this, $343,000,000 or 71 per cent has been added since 1945. Construction expenditures for 1956 are expected to be about $50,000,000. The budget provides over $13,000,000 for new generating facilities at Yorktown, and at the Bremo power station. The new Yorktown station is scheduled for completion in 1957. Work on the 150,000 kw addition at Bremo power station, which is scheduled for completion in 1958, will require $2,313,000. The total cost of this addition will be about $23,000,000.

The Washington Water Power Co., Spokane, Wash. Construction expenditures in 1955 totaled $9,725,571. Biggest item on the 1955 construction schedule was the beginning of work on the company's Noxon Rapids hydroelectric project in western Montana, due to begin producing the first of its initial 400,000 kw of capacity by 1959. Work now under way on additional facilities will at least double the company's generating capability by 1960.

The West Penn Electric Company, New York, N. Y. Expenditures in 1955 by subsidiary companies (Monongahela Power Company, The Potomac Edison Company and West Penn Power Company) amounted to $20,900,000. It is expected that by the end of 1956, the construction of the initial unit at the Armstrong station of West Penn Power Company will be well along. It is planned for operation early in 1958. The Potomac Edison Company will start the installation of a new unit at the R. Paul Smith station late this year with an expected capability in excess of 75,000 kw to be placed in service toward the end of 1958. Several new 132,000 volt transmission lines are also being built. Accordingly, gross additions in 1956 will increase materially over 1955. They are estimated at $40,000,000.

West Penn Power Company, Greensburg, Pa. Gross electric property additions during 1955 were approximately $10,600,000. Plans for the new Armtsrong generating station, to be constructed along the Allegheny river north of Kittanning, Pennsylvania, were announced during 1953. Construction of an initial 165,000 kw unit is under way and completion is expected early in 1958. Planned additions for 1956 are estimated at $25,000,000—almost half of which is this year's expenditure on the new generating station.

Western Light & Telephone Company, Inc., Kansas City, Mo. Construction expenditures in 1955 amounted to $4,755,000, which included the cost ($2,600,000) of the second generating unit of 20,000 kw capability at the Arthur Mullergren station. The 1956 construction budget amounts to $5,984,000; however, a portion of this will be carried over into 1957. The principal project in the 1956 budget is the installation of a third generating unit with a capability of 20,000 kw at the Fort Dodge generating plant which is planned to be in operation before the summer peak load of 1957. The cost of this installation is estimated at $3,000,000.

(*Continued on page 70*)

This announcement is neither an offer to sell nor a solicitation of an offer to buy any of these Bonds. The offer is made only by the Prospectus.

$30,000,000

Consolidated Edison Company of New York, Inc.

First and Refunding Mortgage Bonds, 3⅝% Series L, due May 1, 1986

Dated May 1, 1956 *Due May 1, 1986*

Interest payable May 1 and November 1 in New York, N. Y.

Price 101.377% and Accrued Interest

Copies of the Prospectus may be obtained from only such of the undersigned as may legally offer these Bonds in compliance with the securities laws of the respective States.

MORGAN STANLEY & CO.

BLYTH & CO., INC. *GOLDMAN, SACHS & CO.* *HARRIMAN RIPLEY & CO. Incorporated*

KIDDER, PEABODY & CO. *LAZARD FRERES & CO.* *LEHMAN BROTHERS*

MERRILL LYNCH, PIERCE, FENNER & BEANE *SALOMON BROS. & HUTZLER*

STONE & WEBSTER SECURITIES CORPORATION *UNION SECURITIES CORPORATION*

WHITE, WELD & CO.

May 23, 1956.

PUGET POWER... DYNAMIC PROGRESS IN 1955

QUICK FACTS—1955

	Amount	Increase Per Cent Over 1954
Net Income for Common Stock	$ 4,924,981	10.4
Per Share of Common Stock	$1.51	10.2
Dividend Rate Per Share, End of Year	$1.20 (a)	10.1
Operating Revenues	$23,358,911	11.3
Gross Additions to Utility Plant	$ 9,821,562	40.0
Kilowatt-hour Sales (in thousands)	1,880,523	14.2
Peak Load—Kilowatts	482,700(b)	27.7
Customers at End of Year	186,856	3.5
Average Annual Kilowatt-hour Use Per Residential Customer	6,540	11.7

(a) On basis of 3,266,819 shares outstanding.

(b) This exceptionally high peak was recorded on November 14 due to unusually cold weather.

For copy of Puget's 1955 Annual Report, write: Frank McLaughlin, President, 860 Stuart Building, Seattle 1, Washington.

PUGET'S Annual Report reveals that 1955 was the Company's biggest year—one of "dynamic progress"—built on the demonstrated confidence of many people. It was a year of record highs for Puget in important phases of its operations.

Common stock earnings, largest in the Company's history, increased 10.4% over those in 1954. In 1955 they represented 21.1% of Puget's revenues—one of the very highest ratios in the electric utility business.

The Company's exceptional capitalization ratio of 40% debt and 60% equity will, on the basis of present projections, enable $87 million of new construction planned for the years 1956-1959 to be financed wholly by senior securities and from internal sources—with a resultant Common equity ratio of more than 40% in 1959.

The population growth in the Company's territory was twice that of the rest of the State, four times that of the country as a whole (1940-1950) and is forecast to increase 60% (1955-1965). An independent survey also predicts for the same period a two-thirds gain in customers, and a sharp rise in the average residential customer use of electricity from 1955's all-time high of 6,540 to more than 9,000 kilowatt-hours a year.

With a vastly improved "climate," effective partnership in the succesful Puget Sound Utilities Council—Puget was never in better shape to translate its excellent growth, earnings and dividend prospects into realities for stockholders—to maintain good electric service at reasonable rates—to bring about greater customer benefits through increased use of electricity—and to play a vital role in the upbuilding and development of the territory it serves.

PUGET SOUND POWER & LIGHT COMPANY

Western Massachusetts Companies, Greenfield, Mass. Total construction expenditures for 1955 were $7,133,384, including the amounts spent on the first stages of the construction of the 100,000 kw unit No. 3 at West Springfield station. A new high-voltage substation and a new 115,000 volt underground circuit, completing a transmission ring around the city of Springfield, were placed in service in November, 1955. The company's construction program for the two years 1956 and 1957 is expected to cost about $26,000,000.

Long range planning envisages further capital outlays in the three years 1958, 1959 and 1960 totaling about $16,000,000.

Wisconsin Electric Power Company, Milwaukee, Wis. Good progress was made in 1955 on a new three-year $110,000,000 construction program. A third 120,000 kw generating unit was placed in service at Oak Creek. With the completion of this unit, the generating capacity of the system reached 1,252,610 kw. Work was begun on a fourth unit scheduled to be placed in service in 1957. When completed, the Oak Creek plant will be capable of generating in excess of 500,000 kw and will be the largest in Wisconsin. This will complete the original plan for Oak Creek which contemplated the completion of 500,000 kw of capacity at the location within the current decade.

Wisconsin Power and Light Company, Madison, Wis. Construction expenditures for 1955 totaled $12,339,000, with $7,979,000 being spent for additions and improvements to the electric transmission and distribution systems. During the last ten years such expenditures have totaled $113,572,000 and represent 70.9 per cent of plant investment at the end of the year. Generating capability has creased from 129,000 kilowatts 1945, to 382,000 kw in 1955, an crease of 196 per cent. The seco 75,000 kw unit at the Rock River g erating station was placed on the li on November 1st, representing an vestment of $10,011,000.

Wisconsin Public Service C poration, Milwaukee, Wis. E penditures for new construction d ing 1955 totaled $5,786,000. Most the expenditures were for extens additions and improvements to el tric and gas transmission and distri tion systems to take care of increa business. Expenditure for 1956 w approximate $7,550,000 which will clude initial expenditures of appro mately $360,000 in connection w the addition of a 75,000 kw unit at t Pulliam plant which is estimated cost $12,000,000 and is expected to in operation in 1958.

P.U.R. QUESTION SHEETS

an educational opportunity

With the least possible expenditure of time, effort and money, *utility executives, lawyers, accountants, engineers* and *others* interested in any *phase* of *public utility regulation* can keep well informed through these *brief, four-page* leaflets issued every two weeks.

They consist of 10 questions and 10 authoritative answers based on current decisions revealing court and commission views pro and con. Annual subscription $10.

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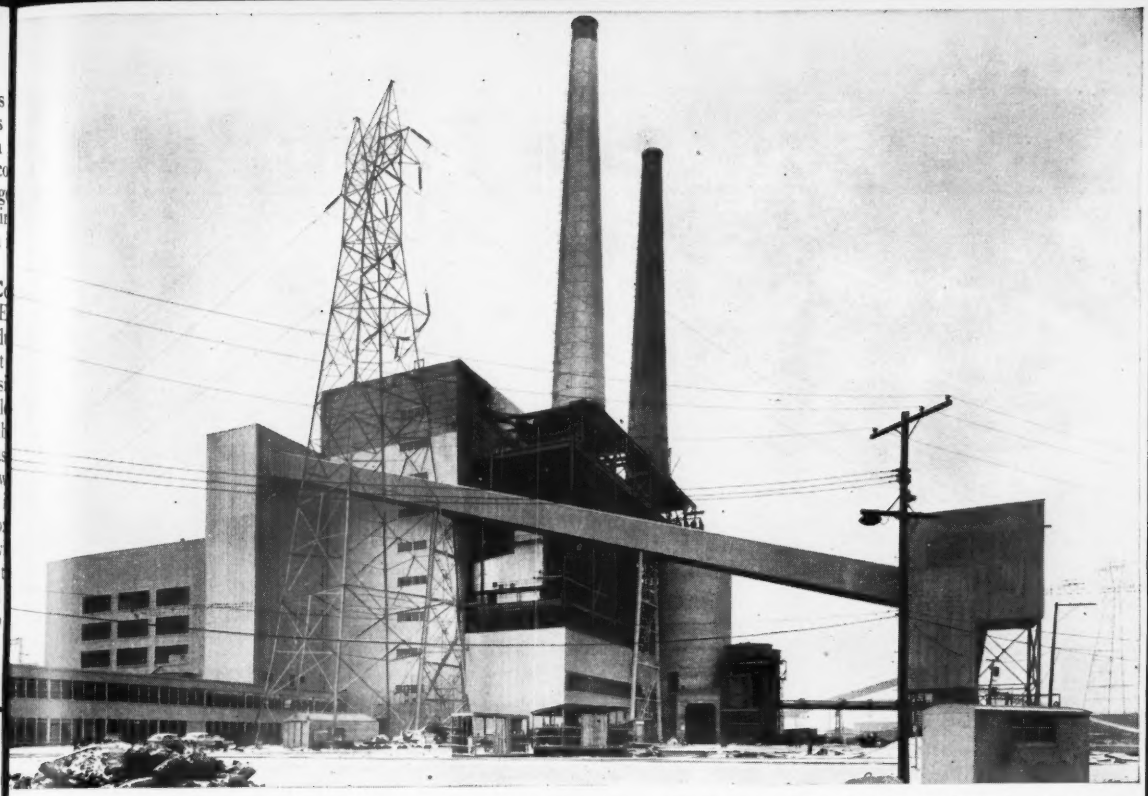

River Rouge Power Plant is newest link in Detroit Edison electrical system.

To keep ahead of tomorrow

Detroit Edison's constantly expanding program is geared to stay well ahead of the increasing electrical needs of the thriving communities in the Southeastern Michigan area.

Newest addition to the system is one of the most modern and efficient generating plants of its kind. The new River Rouge installation boasts the largest turbine-generator in the world—a unit which alone adds 349,000 H.P. to Detroit Edison's system. This increased capacity will enable Edison to meet large residential and manufacturing requirements.

Detroit is not just "automobiles," it has more than 25,000 persons employed in non-automotive industries. Only four other cities in the United States—all substantially larger in population—have total industrial employment exceeding the non-automotive employment of Detroit industries.

Thirty-eight per cent of Detroit Edison's revenue is domestic—generally considered the stable backbone of the utility business.

Detroit Edison today serves nearly 4 million people. By 1975 this number will be 5.4 million. The demonstrated ability to keep pace with the area it serves is Edison's promise of continued progress and assurance of plentiful power.

Edison system map shows high voltage transmission lines, major interconnections, and six power plants. The plants operate as one unit, forming an electrical pool that can supply plenty of power any place in Southeastern Michigan.

THE DETROIT EDISON COMPANY

Built on an Unassailable Foundation

PACIFIC® BOILER FEED PUMPS

PARTS EITHER CIRCULAR OR CYLINDRICAL

CARE AND PRECISION DURING MANUFACTURE & ASSEMBLY

UNITIZED INTERNAL ASSEMBLY AMPLY SUPPORTED · FREE TO EXPAND

PRECISION BALANCING FREE FROM VIBRATION IN OPERATION

EXPANDS WITHOUT DESTROYING ALIGNMENT OR CLEARANCE BETWEEN PARTS

DESIGN CLEARANCES STAY PUT CONTINUOUS SMOOTH OPERATION

RING TYPE PRESSURE JOINTS
METAL-TO-METAL POSITIVE SEAL | SEALED TIGHT—NOT OPENED BY INTERNAL PRESSURE

HIGH EFFICIENCY LONG USE LIFE · MINIMUM MAINTENANCE

GOOD ENGINEERING AND DESIGN SUPREME QUALITY MATERIALS

CAREFUL, PRECISE WORKMANSHIP

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Pacific Boiler Feed Pumps
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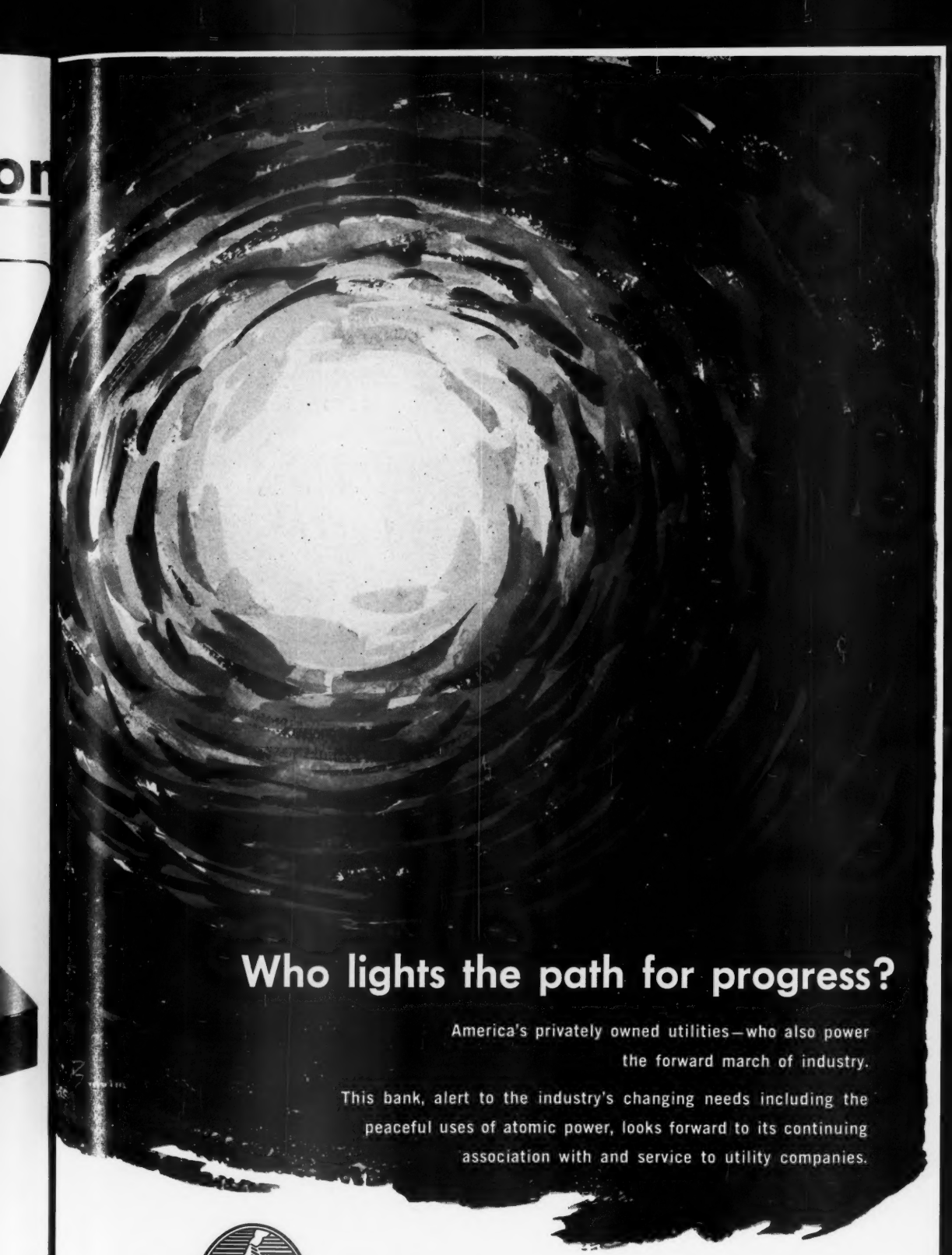


Who lights the path for progress?

America's privately owned utilities—who also power the forward march of industry.

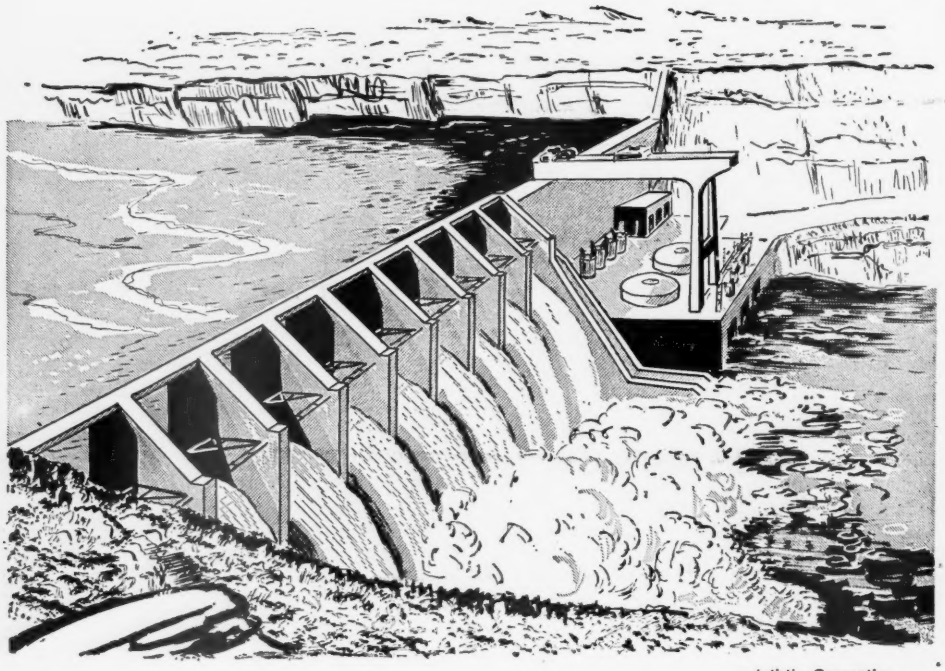
This bank, alert to the industry's changing needs including the peaceful uses of atomic power, looks forward to its continuing association with and service to utility companies.

BANKERS TRUST COMPANY

16 Wall Street, New York 15, N. Y.

Member Federal Deposit Insurance Corporation

We've got a new job . . .



—Artist's Conception of Cochrane Plant

. . . for the busy Missouri River

Yes, the Missouri River, which has played a major role in the development of the West since the days of Lewis and Clark, 151 years ago—and even before that, is getting another job. On April 23, the Federal Power Commission granted The Montana Power Company a license to build and operate Cochrane Hydroelectric Development as a unit of our existing Missouri-Madison facilities.

Work already has begun on Cochrane Dam, which will produce 60,000 additional kilowatts of power to help Montana grow, boosting our available capability to 671,000 kilowatts.

Completion of this new project in the Great Falls section of the Busy Missouri River will give us 13 hydroelectric plants. We also have a steam-electric generating plant at Billings.

MONTANA HAS PLENTY OF POWER. WE'RE SEEING TO THAT

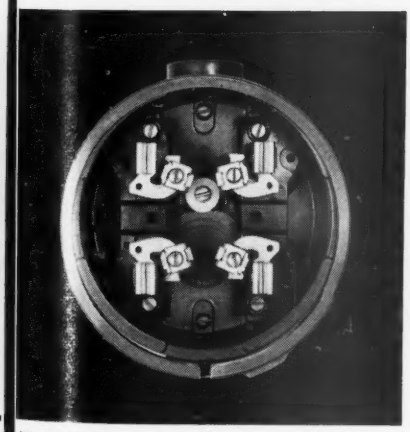
THE MONTANA POWER COMPANY

Easy to read

Meter reading is faster, more accurate with Westinghouse cyclometer registers. Large, easy-to-read numerals on a white background provide excellent readability at a glance. "Jump advance" of all four counter drums eliminates partially obscured figures.

The cyclometer register can be supplied on all Westinghouse DS and DA Lifetime meters . . . resets quickly and easily. All register gears are precision milled for accuracy, and gold finished for corrosion protection.

Contact your Westinghouse sales engineer for additional information on the cyclometer register, or write Westinghouse Electric Corporation, 3 Gateway Center, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-40486



More inside space plus larger, improved terminals make Westinghouse meter sockets easier to wire.

YOU CAN BE SURE...IF IT'S

Westinghouse

This announcement is neither an offer to sell nor a solicitation of an offer to buy any of these Debentures. The offer is made only by the Prospectus.

$300,000,000

GENERAL ELECTRIC COMPANY

Twenty Year 3½% Debentures Due 1976

Dated May 1, 1956 — *Due May 1, 1976*

Interest payable May 1 and November 1 in New York City

Price 100½% and Accrued Interest

Copies of the Prospectus may be obtained from only such of the undersigned as may legally offer these Debentures in compliance with the securities laws of the respective States.

MORGAN STANLEY & CO.		GOLDMAN, SACHS & CO.
DILLON, READ & CO. INC.	THE FIRST BOSTON CORPORATION	KUHN, LOEB & CO.
BLYTH & CO., INC.	DREXEL & CO.	EASTMAN, DILLON & CO.
GLORE, FORGAN & CO.	HARRIMAN RIPLEY & CO. Incorporated	KIDDER, PEABODY & CO.
LAZARD FRERES & CO.		LEE HIGGINSON CORPORATION
LEHMAN BROTHERS		MERRILL LYNCH, PIERCE, FENNER & BEANE
PAINE, WEBBER, JACKSON & CURTIS		SALOMON BROS. & HUTZLER
SMITH, BARNEY & CO.	STONE & WEBSTER SECURITIES CORPORATION	
UNION SECURITIES CORPORATION		WHITE, WELD & CO.

May 15, 1956.

AMERICA'S NEXT BIG INDUSTRIAL DEVELOPMENT

On a base of enormous deposits of iron, coal and copper, uranium, oil and chemicals, what is inevitably to be America's next great industrial development is now under way in the west. It is centered in the sprawling Utah, Idaho, Colorado and Wyoming area served by Utah Power & Light Co. Here are rich concentrations of practically every raw material needed by modern industry.

- **Every major basic raw chemical.**
- **60% of U.S.A. phosphate reserves.**
- **214 different minerals.**
- **One-third of nation's copper.**
- **Largest proved uranium reserves in the nation.**
- **Greatest concentration of non-ferrous metal mills, smelters, refineries in U.S.A.**
- **Largest steel mill west of the Mississippi.**
- **Low-cost power, water, fuel.**
- **Intelligent and stable labor force.**
- **Sound diversified economy.**
- **Healthful climate with low humidity.**
- **A gateway to the rich, far west market where America is growing fastest.**
- **Plus . . . plenty of "elbow room".**

UTAH POWER & LIGHT CO.

A Growing Company in a Growing West

New DODGE heavy-duty "station wagon" doubles as truck-of-all-work!

Goes places a standard station wagon can't... carries up to 50% more payload!

Take a good look at the new Dodge *Town Wagon*—the ideal low-cost vehicle for your business! It's a double-duty carrier of passengers, cargo, or *both*. And with Forward Look styling it's as handsome as it is versatile!

The *Town Wagon* is built on a rugged ½-ton Dodge *truck* chassis, giving you extra ground clearance for off-the-road driving. It's powered by either the famous Dodge L-head Six or the new Power-Dome V-8.

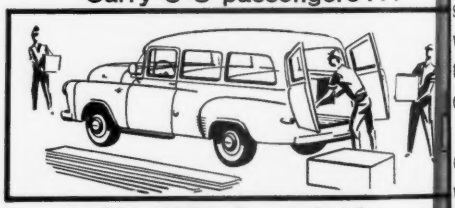
With seats in place, one model carries six passengers, the other eight. In the six-passenger model you've got about 90 cubic feet of load space in the rear compartment. The same amount of space is available in the eight-passenger model with the rear seat removed. You can also take all extra-passenger seats *out* of either model, leaving clear, unobstructed room for a big, truck-size payload of 1575 pounds.

You can see . . . and *drive* . . . the *Town Wagon* at your Dodge dealer's now.

DODGE TOWN WAGON

WITH THE *FORWARD* LOOK

Carry 6-8 passengers . . .



or big, 1575-lb. payloads . . .

or passengers plus cargo

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Please send me more information and complete specifications for the new Dodge *Town Wagon*

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HOW THE SOUTHERN COMPANY HELPS TO PROVIDE A HUNDRED MILLION DOLLARS A YEAR FOR SOUTHERN GROWTH

The Expanding South Has A Big Appetite for Electric Power ... The Driving Force Behind Its New Industrial Might

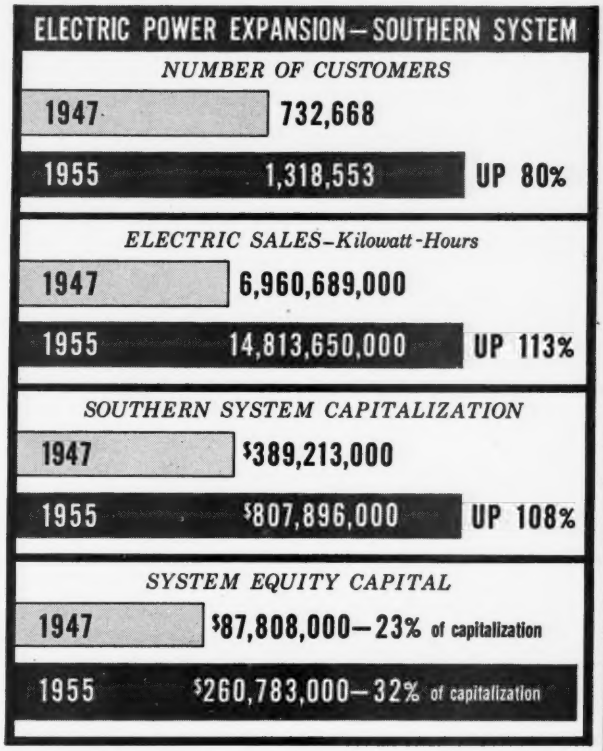
DURING the past eight years demands for electricity in the four-state area served by The Southern Company System have more than doubled. It takes many things to satisfy these huge requirements: steel and concrete for power plants and dams, great turbo-generators, transmission lines to take the power where it's needed—and money. The system operating companies in Alabama, Georgia, Florida and Mississippi will spend more than a billion dollars in the decade 1952 through 1961 on new power facilities.

The Southern Company helps to finance the construction programs of its operating companies, and at the same time strengthens their capital structures. Southern does this by selling shares of its common stock to the public and investing the proceeds, together with retained earnings, in the operating companies, thus, as the security analyst puts it, "building up their equities."

During the past eight years, for example, when the system carried out a $607 million construction program, $178 million of this amount was made available by The Southern Company. Southern increased its investment in Alabama Power Company by $77 million, Georgia Power Company by $76 million, in Gulf Power Company by $12 million, and in Mississippi Power Company by $13 million. Southern's additional investment in these companies helped to build power plants and lines and substations—but it did more than that. By raising the equity portion of their capital structures it created a more favorable market for their bonds and preferred stocks.

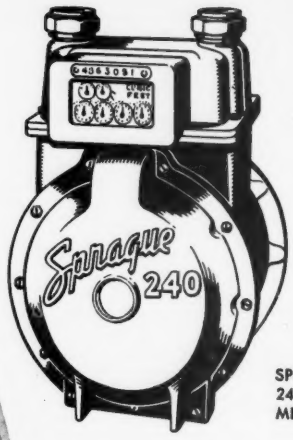
Today the total capitalization of the Southern System is in excess of $800 million, more than double that at the beginning of operations in the fall of 1947. And while the capital structure has expanded, it has become stronger, for an important feature of its growth has been the rise in equity from 23% at the end of 1947 to 32% at the end of 1955.

The construction needs of the system operating companies are estimated at nearly three-quarters of a billion dollars for the 1956-1961 period. The Southern Company will continue its important part in financing electrical expansion so essential to the further growth of the South.



Shaded section designates area served by the four investor-owned electric power companies in The Southern Company system:

Alabama Power Company, Birmingham, Alabama
Georgia Power Company, Atlanta, Georgia
Gulf Power Company, Pensacola, Florida
Mississippi Power Company, Gulfport, Mississippi



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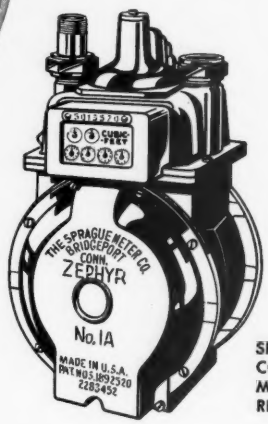

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Behind the Headlines

50 Years of Progress in Electric Power

Utility Will Build Giant Generators

American Gas Units Called Biggest Ever

By Niles N. Peebles

Business Milestones

American G & E Unit Plans $125 Million Ohio Steam Generating Plant

By a Wall Street Journal Staff Reporter

NEW YORK — Ohio Power Co., a subsidiary of the American Gas & Electric Co., plans to build a 1 million kilowatt, $125 million steam generating plant on 800 acres of land it's acquired along the Ohio River just north of

American Gas Plans Huge Expansion

Fort Wayne, Ind. (Spl.)—The American Gas & Electric Company, parent firm of the Indiana & Michigan Electric Company of Fort Wayne, yesterday announced plans for a $700,000,000 expansion program.

President Philip Sporn said it will be the biggest expansion in the company's 50-year history and is the first step in a long-range program to quadruple its facilities in the next 20

Muskingum Power Plant To Expand

The American Gas & Electric System announced yesterday that a new 225,000-kilowatt generating unit costing $28,000,000 will be built at the Ohio Power Co.'s Muskingum River plant at Beverly.

President Philip Sporn of American Gas & Electric said the unit will be completed about June, 1957, and that coal requirements will be approximately 575,000 tons a year. The new unit is the eighth in a series of generating facilities with capabilities ranging between 215,000 and 225,000 kilowatts to be built in the AGE system. Five of these units are in service, including two at Appalachian Electric Power Co.'s Kanawha River plant. One is under construction at Appalachian's Glen Lyn plant.

American G&E Plans Five-Year, $700 Million Expansion Program

Firm Proposes to Add 2,600,000 Kilowatts to Capacity by 1960 At Cost of $350 Million

By a Wall Street Journal Staff Reporter

NEW YORK—American Gas & Electric Co. expects to spend $700 million on new power generating and distribution equipment over the next five years, according to President Philip Sporn.

"This building program," Mr. Sporn said, "is the first step in expanding our facilities to meet a demand for electricity which will double our state system we have over the next seven-

NEW MARKS SET BY AMERICAN GAS

Utility's Net Was at Record Levels for First Quarter, 12 Months and March

American Gas and Electric Company had record first-quarter earnings, according to a quarterly statement released over the week-end. New highs also were established in net income for the twelve months ended March 31 and for March alone.

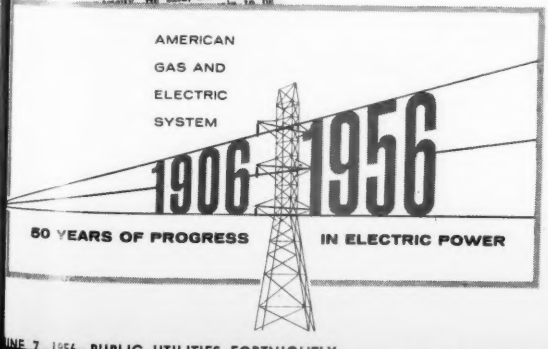
March quarter net income of $1,204,154 represented a gain of 12.5 per cent over the like 1955 period. Net for twelve months amounted to $39,471,427, against $34,058,913 a year earlier, while March net of $3,106,034 compared with $3,858,405 earlier. The increase for March represented a jump of 24 per cent over the 1955 level and the twelve months' gain was 16 per cent.

American Gas and Electric is a holding company whose operating subsidiaries provide electric service in Virginia, Ohio, Indiana, West Virginia, Kentucky, Tennessee and Michigan.

THE STORY OF American Gas and Electric's fifty years could probably be told in news clippings alone. Some, yellowed and torn and buried under auditors' reports in some almost forgotten room, highlight AGE's earlier years—its growth, its problems, its successes.

And other clippings show the tremendous strides made in the postwar years. A sampling from this year alone—not yet half over—reports that AGE has undertaken an unprecedented $700 million five-year expansion program . . . announced that 1955 broke all records for sales and earnings . . . and, most recently, contracted for the building of the world's two largest turbo-generators, each to generate 450,000 kilowatts.

We expect to continue to merit these headlines because progress is something that never stops. Even while you read this, new developments are taking place at AGE which will make possible our continuing to supply the growing area we serve with all the low-cost electric power it wants. Behind the headlines are "50 Years of Progress in Electric Power"—a good base on which to start the next 50.



American Gas and Electric Company

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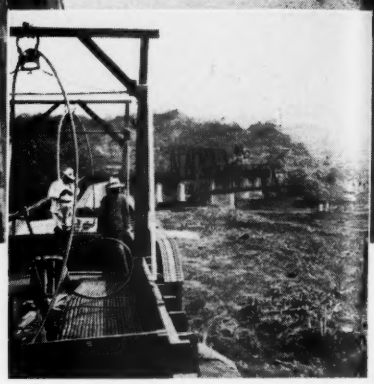
The Panama Canal



Laying Kerite Cable across the Isthmus, 1908

Since it was first manufactured almost a century ago, Kerite insulated cable has been closely integrated with the international development of the communications industry. One of the most important installations of Kerite cable was made in 1908 across the Isthmus of Panama, a distance of 50 miles, uniting the Atlantic and Pacific ocean cables.

Early performance records of this outstanding product indicated that Kerite cable was unusually well equipped to withstand the extremely severe conditions attending this tropical installation. This cable, originally laid on the ground in the jungle, was submerged for 30 miles in Gatun Lake upon completion of the canal.

As a result of the operation of this initial cable, a second one was installed in underground ducts in 1918 under the supervision of Mr. C. R. R. Harris, now Chairman of the Board of The Kerite Company. Subject to similar adverse conditions, this cable continues to perform the important function for which it was designated at a critical point in communications history.

The value and service life of a product can be no greater than the integrity and craftsmanship of its maker.

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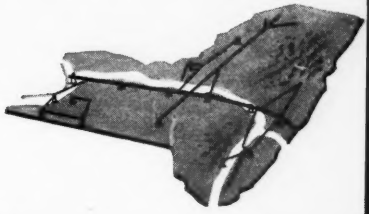

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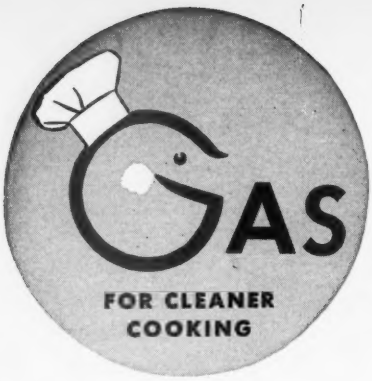

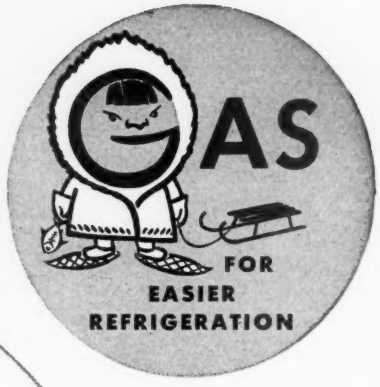

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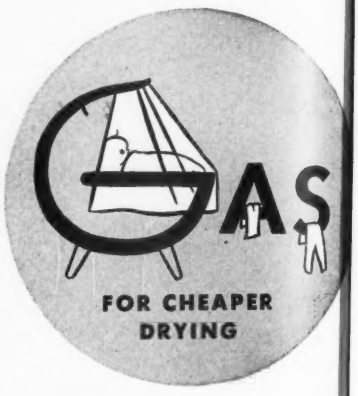

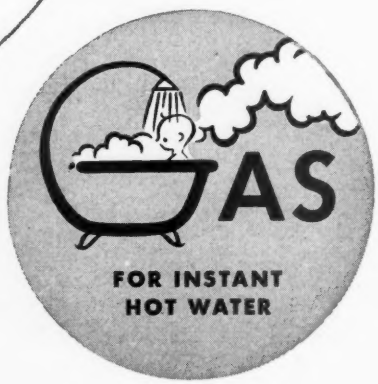

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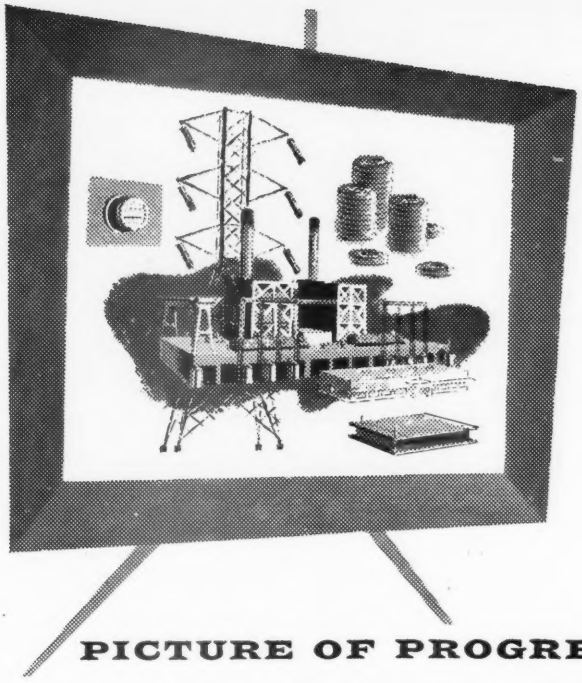

PICTURE OF PROGRESS

$250 Million for New Plant in Twenty-four Months!

The nation's fastest-growing electric utility, Southern California Edison Company, in 1955 added to its system the equivalent of a city the size of Omaha or Oklahoma City. Eighty-seven thousand new meters connected during the year brought to 1,352,708 the total number on the company's lines. Sales climbed 14% above those of 1954.

Even more spectacular growth lies ahead. During the next two years, the company will spend more than $250,000,000 in its record construction program to build new generating plants and other facilities. It is expected that by the end of 1958 the company's generating capacity will be increased by approximately fifty percent.

The objective of Southern California Edison Company is the promotion of sound growth in its service area, for in the well-being of its communities and customers lies the key to the company's continued prosperity.

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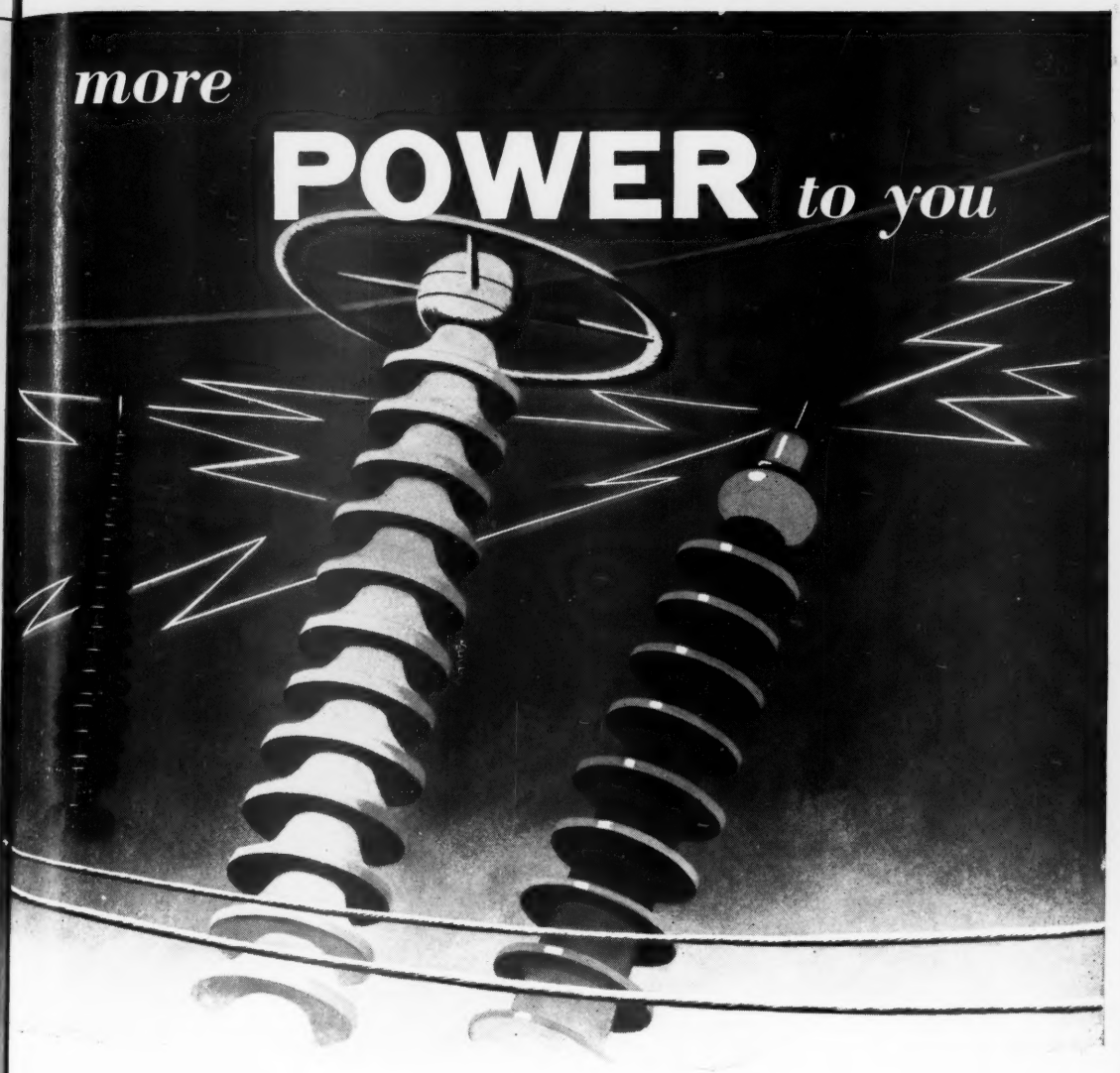

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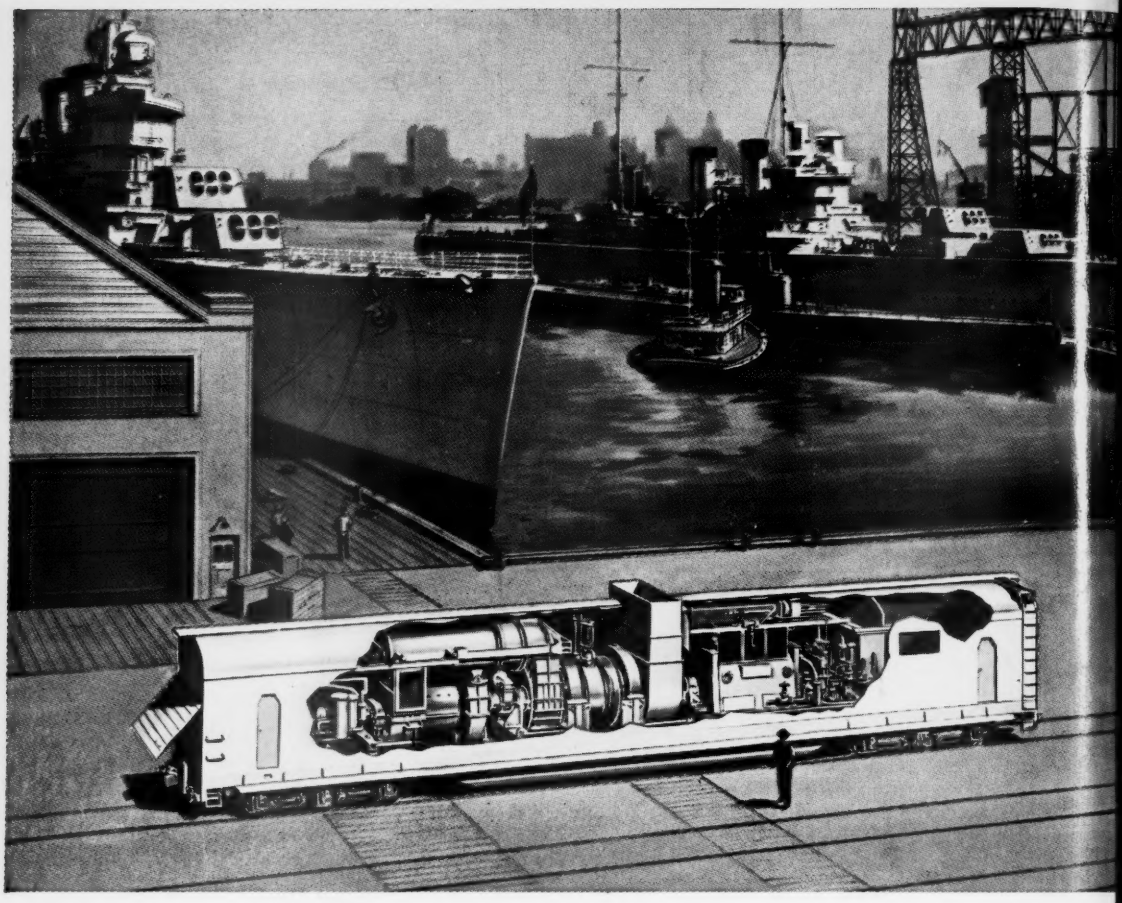

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